

ENGINEERING

REFINEMENTS MADE IN NORGE ROLLATOR

(Concluded from Page 1, Column 5)

is larger, yet weighs only 25 lbs., which is 2½ lbs. less than the '32 compressor. The cylinder and plate are bolted directly together without gaskets. The only gasket used is on the unit dome.

Oil reservoir is within the dome, on the opposite side of the flywheel. The new compressor has a 52.2 cu. ft. flow of gas per minute, a 20 per cent increase in capacity, according to Major Blood. As compared with the old compressor's displacement of 2 cu. in., the new unit has a displacement of 2.4 cu. in.

The compressor blade is wider, due to increased throw of the crank, and the unit makes 625 r.p.m., but with the same stroke as the old one.

625 R.P.M. on Compressor

New Rollator holds 2½ pints of oil, as compared with the '32 unit's capacity of 1½ pints. Its roller is thicker, and its blade spring is now of the torsional type.

In the new machine, end thrust in the shaft is controlled by a bronze collar located at the end of the shaft opposite the flywheel. As head pressure increases, with its tendency to force the shaft toward the seal face, the bronze washer restricts this movement, thereby keeping an equal pressure between the seal face and the bronze seal face.

Midway in the shaft is another thrust washer which restricts the shaft from going in the opposite direction, causing the same seal pressure

whether the machine is operating or not.

The unit's counterweight has been moved from the end bell to the center of the body. This acts as a centrifugal pump to bring oil out of the dome through the seal chamber, and draw in other oil from the coolest part of the oil body.

Circumferential lapping of the seal has been adopted to eliminate cross-scratching and reduce gas leakage to a minimum. The new shaft is longer, and the flywheel overhang has been reduced.

The compressor's check valve is smaller than that used last year, but its opening is larger, giving a smoother flow of gas, the designers claim. Motor is now mounted on a rocking pivot, with the pivot mounted on rubber.

Receiver Larger

The receiver is 12 per cent larger, while the size of tubing in the evaporator has been reduced. A tadpole fan has been substituted for the propeller type formerly used.

New unit is equipped with an automatic belt tightener which gives a constant belt tension of 18 lbs. The flywheel pulley is flat, and while the inside surface of the belt contacts this flywheel, its two edges contact the motor pulley. A ribbed pulley is being used on the motor.

Larger trays with larger ice cube moulds are features of the new evaporators which are now being made in the company's Muskegon plant.

Solid float is employed in all evaporators, with a capillary oil return in the evaporator head, providing oil suction back through bronze test-tube-like containers by means of over-hanging wicks.

Weight of the float is applied to the needle valve through a cushion spring.

Needle of the valve is in an enclosure which maintains alignment toward its seat.

The unit's control bulb is now located between two tubes of the evaporator, and a new manual adjustment is now provided for defrosting the evaporator while the unit continues to operate.

The throat lining of the cabinet is being made from chemically-treated maple. In single-door cabinets, the suction line has been moved farther back from the metal in the pilaster, while in the two-door boxes, there is no tubing in the pilaster.

Knapp Talks on Training

Addressing the convention on the sales possibilities of 1933, Mr. Knapp declared that improper training of retail salesmen has been a handicap to sales of electric refrigeration in the past, and that their thorough training this year is the key to substantial profits in the future. He called this task of sales training "the dealer's and distributor's most important job in 1933."

Speaking of market possibilities for electric refrigerators in 1933, Mr. Knapp said, "a new era has begun—an era in which beauty must be combined with the usefulness of a household appliance."

Reduce Selling Costs

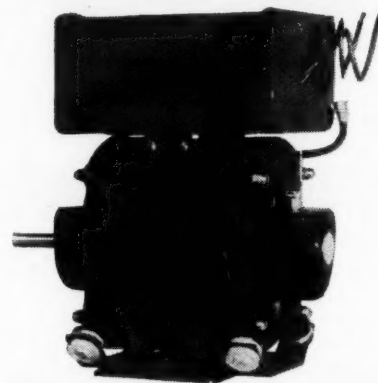
C. D. Donaven, head of the Norge manufacturing department, declared that distributors and dealers will make substantial profits in 1933 if they reduce substantially their present selling costs.

He then discussed "Housecleaning" in business organizations, and said, "Let's see some new looks and ideas in our businesses in 1933. Let's make it a 'change' year."

Harry Spencer, Norge service manager, urged all distributors to train their dealers in the technic of servicing, and said that simplified instructions would be issued to all dealers to assist them in making adjustments and repairs.

In an outline of the Norge merchandising program for 1933, James Ster-

Capacitor Motor



New capacitor motor introduced by Ohio Electric Motor Co. for electric refrigerator service.

ling, sales promotion manager, asked that all distributors adopt some system of analyzing their market and dealers' activities during the year.

He announced that 17 sales promotion pieces will be used this year as compared with the 68 published last year. Primary pieces will be a counter pickup, a self-mailer, and a deluxe catalog.

A new Norge Viking club was also announced by J. A. Sterling. Membership in this organization will be given to all retail salesmen who make consistently outstanding sales performances during a certain period of time.

Sterling said that all Norge sales contests this year will be held on a point basis, rather than a quota basis, with every salesman receiving some prize, regardless of his volume.

During the convention, several members of Cramer-Krasselt Co., Norge advertising agency, addressed the distributors.

Today is to be devoted to a trip through the Muskegon plant and to conferences for distributors. The convention will close tonight, following an address by Major Blood.

NEW REFRIGERATOR MOTORS ANNOUNCED

(Concluded from Page 1, Column 4)

lightly burnished to harden and polish the surface. The bearings are fitted to an average of .0004-in. clearance on each side, Mr. Jessop states.

The lubrication system employs an oil reservoir with wool packing. Oil is circulated through the entire length of the bearing, according to Mr. Jessop, returned to the reservoir, and is strained through wool as it is lead back to the bearing. End play is provided for by a heavy spring washer at each end, riding between two bone fibre washers.

To attain the required starting torque, both types of motor have a dry electrolytic condenser similar to that widely used on the old direct current radios. No transformer is required. This condenser is in the circuit only during the starting period of a few seconds.

In addition to the starting condenser, the capacitor start and capacitor run motors have also an oil-pregnated paper condenser in the circuit to improve the running efficiency and power factor.

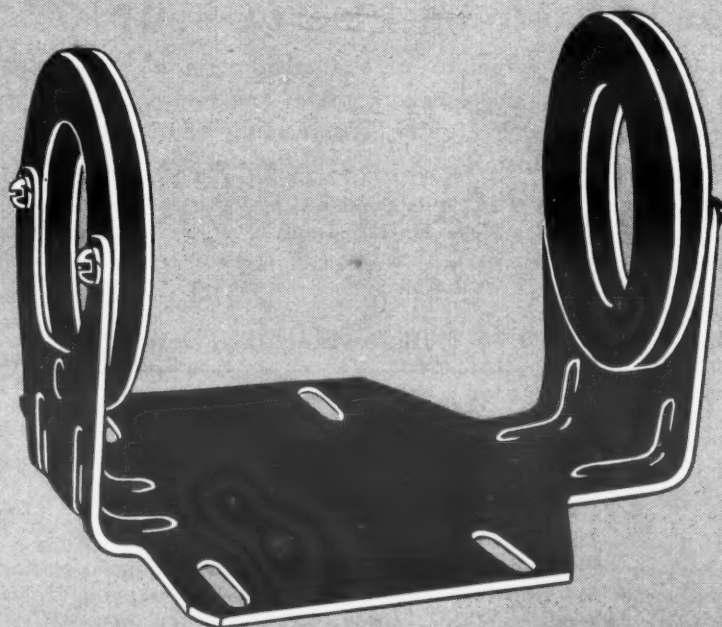
Due to the extra condenser, the capacitor start and capacitor run motors are higher priced, Mr. Jessop points out, but at any given load its performance is better in power factor, efficiency, and watts input. Both motors, however, comply with Nema regulations governing efficiency and starting current, he reports.

LOUIS ALLIS DESIGNS NEW SPLASH-PROOF MOTORS

MILWAUKEE—To prevent entrance of water splashed with high pressure from any angle, Louis Allis Co. has developed a new line of splash-proof motors.

A double baffle in an elliptical-shaped air passage in each endbell provides the protection.

NOW... A REFRIGERATOR MOTOR THAT IS FLOATED IN RUBBER*



Here is the latest, and one of the greatest refinements of the electric refrigerator motor—a cradle mounting that successfully floats the motor in rubber. The support is at the ends . . . allowing rotative flexibility, but making it impossible for the motor to twist enough to throw the shaft or pulley out of line. The rubber is vulcanized both to the motor ring and to the supports . . . it cannot creep, and oil can't get

in to cause deterioration. There is no metal-to-metal contact whatever—vibration and noise are effectively insulated from the mounting. The motor itself, of course, incorporates all the Delco construction advantages that have proved so successful in more than two million electric refrigerators. All Delco motors are individually engineered to fit the exact requirements of the compressor unit in which they are used.

*Patents Pending

DELCO PRODUCTS CORPORATION, DAYTON, OHIO

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500 SAMPSON DEALERS ATTEND MODEL MEETING

Norge Executives Open Series of Field Conventions

By George F. Taubeneck

CHICAGO—Assisted by the highest officials of the Norge Corp. and Borg-Warner, Pete Sampson, Norge distributor in Chicago and environs, staged a rousing convention for 500 of his dealers Thursday at the Knickerbocker hotel. It was a "coming out party" for the 1933 Norge line.

This "model meeting" of the Sampson Electric Co. occurred the day following the Norge national convention in Muskegon, Mich., and was attended by almost a score of other Norge distributors, who came to see how Mr. Sampson conducts a dealer meeting and thus get ideas for their own conventions.

Distributors in 47 other cities will be running similar meetings during the next six weeks (see end of this story for list of dates and places).

Taking a leaf from John Patterson's book, Mr. Sampson invited the wives of his dealers to attend the sessions; and a goodly number were present at the banquet and entertainment that evening.

Not until 3:10 in the afternoon did all the dealers arrive, so the meeting was run at a rapid rate, adjourning about 6:30 for an hour's respite before the banquet.

"Norge saved the lives of lots of you dealers last year," Mr. Sampson told the assemblage. "When everything else went to pot, Norge sales held up and gave you a live line on which you could keep busy."

"There isn't any specialty field today which has the same appeal to buyers as electric refrigeration. If you can maintain or improve your present position, in later years the promotion of the home electrical is going to mean real money to you."

One-year guarantees, Mr. Sampson declared, are evidence that the industry is getting back on a profitable basis, and a good omen for the future.

Major Howard Blood, president of (Concluded on Page 9, Column 1)

INSIDE DOPE

By George F. Taubeneck

W. D. McELHINNY, Copeland's vice president in charge of sales, is just about the closest-mouthed salesman we've ever come across.

Now and then we take an evening off and play a little with Mac. He's a grand conviver (our new name for convivial playmate). But when we begin to edge around toward business, Mac just smiles that knowing, Buddha-like grin of his, and changes the subject.

One evening last week, however, we did worm a few hints out of him. We have known for some time that Copeland has something up its sleeve. The silence out there has been ominous—or rather, portentous.

So we asked him, point-blank, if Copeland really was going to market a hermetically sealed compressor of rather unique design. Silence on that subject, but he did break down and confess this:

"George, you remember that editorial you wrote last summer suggesting styled cabinets? And you called me up and wanted to know what I thought of it, and I was noncommittal? Well, what I wanted to say was: 'Shut up, you bum, before somebody else gets the idea.' We were working on a styled cabinet then, and have been ever since."

Added to this hint is the fact that William Robert Wilson, new president of Copeland, has been a style advocate for years. When he took over Maxwell, he dressed up that car and began calling it "the good Maxwell." Recall that? As a Murray executive, he did a lot to promote styled automobile bodies. And a few years ago, while general manager of Reo, he presented

(Concluded on Page 4, Column 2)

Dealers Awarded Prizes for Xmas Displays

NEW YORK CITY—Consumers Power Co., Jackson, Mich., was awarded the \$100 prize for the best window display in the entire Christmas display contest of the Electric Refrigeration Bureau. The power company's window was adjudged the best, regardless of the size or the class entered.

For the best dealer window of 100 sq. ft. or less—\$100 was awarded to Kerr Dry Goods Co., Inc., Oklahoma City. First honorable mention went to Boyle & Mather, Virginia, Minn.; second honorable mention, M. H. Housely Co., Williamsport, Pa.; third honorable mention, A. A. Duckett, Inc., Camden, N. J., which had won the first award in the state-wide competition sponsored by the Public Service Electric & Gas Co.

For the best dealer window of more (Concluded on Page 9, Column 5)

ENGINEER DESCRIBES HOOVER DAM WORK

LOS ANGELES—Details of the Hoover Dam construction project, with an outline of the refrigeration that will be required to remove the heat generated by setting of its concrete, were given by Howard W. Walters of the Ingersoll Rand Co., before a joint meeting of the American Society of Refrigerating Engineers and the National Association of Practical Refrigerating Engineers, Los Angeles chapter, on Jan. 18.

Mr. Walters supplemented his talk with a four-reel motion picture furnished through the courtesy of the (Concluded on Page 9, Column 3)

McCORD MAKES STAINLESS STEEL ICE CUBE TRAY

Flexing Ejects Cubes From New Type Tray

By John T. Schaefer

DETROIT—McCord Radiator & Mfg. Co. has just announced its new stainless steel "all-metal" ice tray from which ice cubes are ejected by flexing the tray sidewise.

No water is required, executives of the company say.

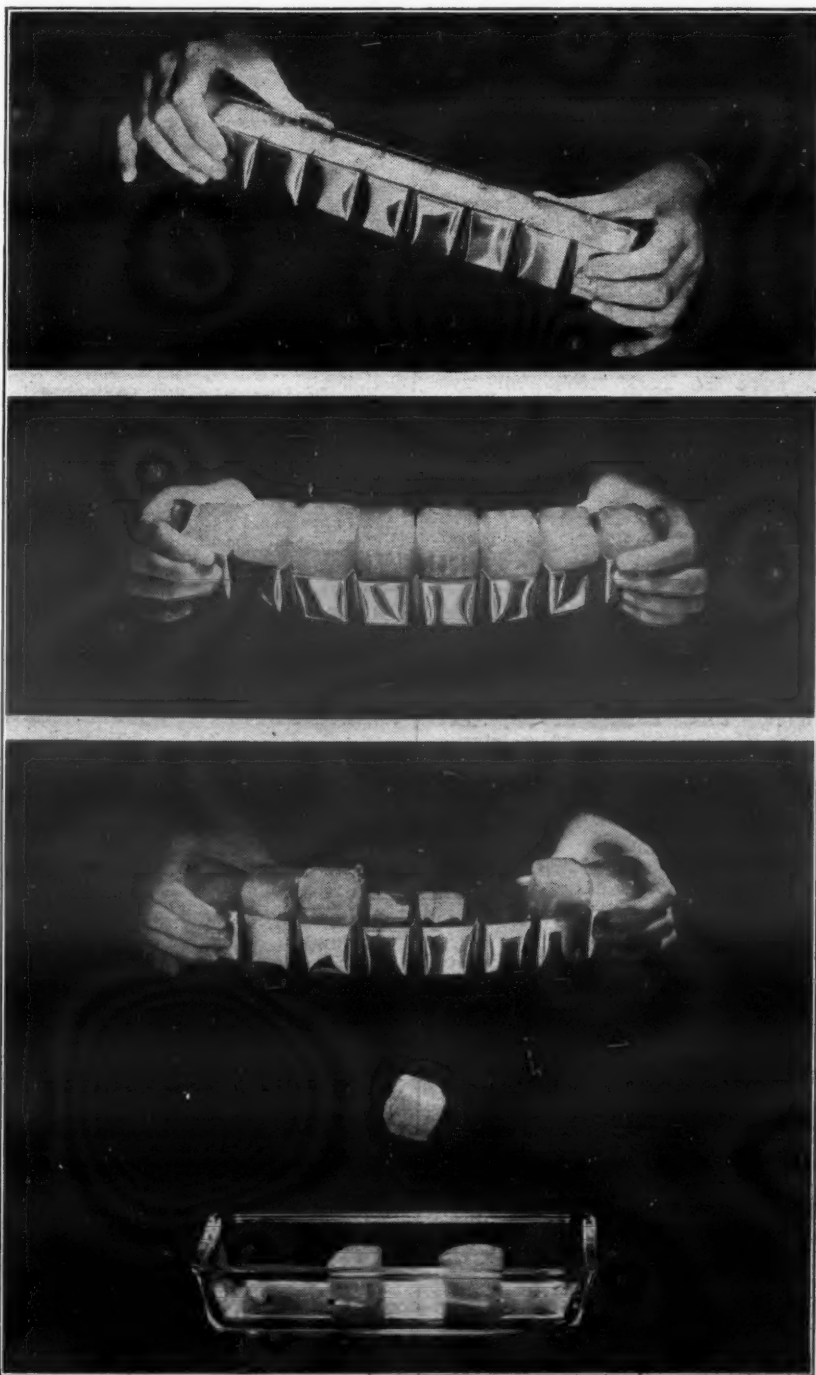
Flexing the tray cracks the ice into cubes corresponding to the division points in the tray, and then forces the cubes up and out. Pressure forcing the ice out is due to the 5-degree draft on both sides of the tray.

The use and general construction of the new trays are pictured below on this page. Trays are single row sections, two or three being required for an evaporator which would hold a two, three, or four row conventional ice cube tray. Each section will retail for about 50 cents, it was announced.

The new tray is the invention of Guy L. Tinkham, vice president of the General Utilities Mfg. Co., McCord subsidiary which manufactures washing machines and other household appliances.

Stainless steel stock .008 in. thick is used for the trays. The method of manufacturing is entirely a forming and folding process, with no drawing operations which would reduce the thickness of any portion of the tray, and no welding to mar the bright surfaces, Mr. Tinkham points out.

HOW McCORD TRAY WORKS



Operation of McCord's new tray is demonstrated by these pictures: top, the starting position; middle, the flexing action; below, how cubes pop out.

LIBRARY New Leader



G. M. JOHNSTON
Universal Cooler Corp. president
leads "Big 12" manufacturers.

SPARTON PUTS NEW FEATURES ON UNITS

JACKSON, Mich.—Ranging in price from \$114.50 to \$410 f.o.b. Jackson, the 1933 line of Sparton electric refrigerators has been presented to distributors by the Sparks-Withington Co.

Features of the new line include spring suspension of the condensing unit, a two-way latch, chromium evaporator doors, increased shelf area, twin-cylinder compressor, sliding shelves, broom-high legs, faster freezing speed, cold regulator on the outside of the cabinet, shelf hanger knobs, and a water cooler, vegetable crisper, and egg basket on most models.

Prices on the line's seven models are as follows: model L-46, \$114.50; L-57, \$156.50; L-72, \$183.50; Deluxe 75, \$241.50; Deluxe 88, \$259.50; Deluxe 106, \$364.50; Deluxe 127, \$410.

Sparks-Withington Co. is now manufacturing its own compressors and cabinets in its plant No. 4, according to Harry G. Sparks, vice president in charge of sales.

COPELAND MARKETS 2 CONDENSING UNITS

MT. CLEMENS, Mich.—Two new condensing units, one a belt-driven 2-hp. model and the other a 1½-hp. machine, have been introduced by Copeland Products, Inc., to round out its line of commercial refrigerating machines.

The model "Y" compressor, powered by a 2-hp. motor, is rated at one ton "plus" or 2,375 lbs. ice melting effect per 24 hours (A.S.R.E. rating). It is equipped with a 3-cylinder vertical-type compressor, driven by three large V-type belts. The throws on the crankshaft are spaced at 120° intervals so

(Concluded on Page 4, Column 3)

Charles Low Tells Dealers How To Display Refrigerators

By Elston D. Herron

MUSKEGON, Mich.—In an address which some persons termed "an A-1 talk on horse sense in merchandising," Charles L. Low, merchandising counsel to Norge Corp., last week told Norge distributors in convention here that poor sales training and inferior goods display are to blame for sales slumps in many dealerships.

"Salesmen don't believe in selling, anymore," he said. "All new sales methods come from the home office, from people who aren't actually selling. Salesmen themselves seldom think of anything new."

"Presentation is the most important part of selling—making words have the proper effect on the other fellow's mind."

There are only three selling forces, said the speaker; they are advertising, goods display, and salesmanship. "When a man says the three selling forces are price, quality, and service,

G. M. JOHNSTON TO BE CHAIRMAN OF BIG 12 MFRS.

Ruthenburg Retained As Consultant to Division

NEW YORK CITY, Jan. 24. (Special to ELECTRIC REFRIGERATION NEWS)—G. M. Johnston, president of Universal Cooler Corp., Detroit, was elected chairman of the Refrigeration Division of National Electrical Manufacturers Association (NEMA) at a meeting held at the headquarters of the association in the R.C.A. building here today.

He succeeds Louis Ruthenburg who has been retained as general consultant to the refrigeration division. Mr. Ruthenburg will have offices located at 2638 Book building, Detroit.

Glenn Muffy, consulting engineer, who has been in charge of the engineering and statistical activities of the division, has resigned.

Action was taken at the meeting affirming the nomination by the Codes and Standards Committee of Messrs. Armstrong of Frigidaire, Blood of Norge, and Johnston of Universal Cooler as Nema representatives to the Underwriters Laboratories in Chicago and as representatives in an industry conference for the development of laboratory standards for electric refrigerators.

All other committees will remain the same as last year.

MASON & BURRITT TO VISIT DISTRIBUTORS

DETROIT—A month's swing through the South for the purpose of studying market conditions and assisting distributors and dealers with 1933 sales plans was started Jan. 18 by George W. Mason, chairman of the board and president of Kelvinator Corp., and H. W. Burritt, vice president in charge of sales.

The tour will take the Kelvinator executives to 24 key cities in the South and Southwest.

"The tour is in keeping with our plan of having many factory executives as possible out on the 'firing line' during 1933," Mr. Mason said. "Such activity will enable us to keep our fingers on the pulse of our market and prepare us more effectively to carry out our business expansion program, which now is being launched."

From Detroit, the two Kelvinator executives journeyed to Atlanta, where on Jan. 19, 20, and 21 they met with officers and members of the sales organizations of the Gilham Electric Co. and the Graybar Electric Co., distributors of the corporation's products.

Leaving Atlanta, Mr. Mason and Mr. Burritt went to Miami, Fla., to visit members of the Kelvinator Appliance Corp.

At this point, Mr. Mason and Mr. (Concluded on Page 4, Column 1)

BY GEORGE F. TAUBENECK ---

Commercial Refrigeration

Possibly the most important trend evidenced in the field of commercial refrigeration during the past year was the move by manufacturers of small commercial refrigerating machines to build units which could take care of larger loads than could previously be handled with one condensing unit.

The tendency towards larger-capacity units in the small machine field has been interpreted by some commercial refrigeration engineers as a movement away from the "battery" of small-capacity units type of installation which has characterized installations in fair-sized food stores and food serving establishments during the past few years.

Copeland started the 1932 movement towards larger commercial units by introducing, at its national convention in February the "Dreadnought" 1-ton condensing unit.

Servel, Inc., added impetus to this movement by introducing, in March, a 1-ton machine in both air-cooled and water-cooled models.

In May the Williams Ice-O-Matic commercial line was extended with the addition of a new 1½-hp. compressor.

Several new condensing units were added to the line manufactured by the Brunner Mfg. Co., with the size of the units extended to include a 1½-hp. machine.

Just before the end of the year, Universal Cooler Corp. introduced a new commercial condensing unit, rated at 200.5 lbs. of ice melting effect per hour. This new unit features a three-cylinder compressor driven by a 5-hp. motor.

Westinghouse made its debut into the field of commercial refrigeration in June, introducing a four-cylinder, hermetically-sealed compressor powered with a ½-hp. motor, to furnish refrigeration for the Westinghouse commercial line, which includes storage cabinets, milk coolers, biological cabinets, and an ice maker.

A new line of commercial refrigerating machines bearing the trade name, "Carrier-Brunswick," was announced by Carrier Corp. early in the fall. The line includes air-cooled units with compressors powered by motors ranging from ¼ hp. to 1½ hp., and water-cooled machines equipped with ½- to 2-hp. motors.

Near the end of the year York Ice Machinery Corp., a leading manufacturer in the field of industrial refrigeration, announced plans for a new line of small tonnage commercial refrigerating machines, using freon (F-12) for use in cabinet coolers and commercial installations.

In January Westinghouse announced a four-model line of water coolers, featured by dual-automatic control and a striking black Micarta finish.

Kelvinator put its new line of eight water coolers into production in April. New condensing units, new low-sides, and cabinets finished in modernistic design featured this line.

Gibson introduced its first water cooler models in May. A pressure and a water type bottle cooler were put into production at this time. In September, Gibson announced that it had started production on a new model water cooler, which would produce ice cubes as well as cold drinking water.

General Electric's innovation of "conditioned air" refrigeration (controlled humidity by forced-air circulation) for its new line of commercial refrigeration, which included display cases as well as storage cabinets, was one of the most noteworthy events in the commercial field during 1932.

"Conditioned air" refrigeration was offered in two types of machines: (1) a "package unit" type with the evaporator and compressor built as a single unit; and (2) a sealed compressor obtainable for remote installation.

Another event of importance to the commercial refrigerator cabinet industry was the formal entrance of the Seeger Refrigerator Co., for more than 30 years a leading manufacturer of commercial refrigerator storage cabinets, into the display case field with a stock line of meat and delicatessen refrigerated display counters.

Although Seeger had made many test installations of its display cases, it did not formally introduce its line until May.

Superior Refrigerator Co. of St. Louis, American Body Co. of Dallas, Tex.; and Refrigerated Display Case Corp. of Watertown, N. Y., were other new comers to the refrigerated display case field. Bardwell-Robinson Co. of Minneapolis bought out the Downing Display Case Corp. of Downing, Wis., but is continuing to manufacture the line of display cases originating with the Downing Co.

Standard Refrigerator Co. of Philadelphia, a display case manufacturer, followed General Electric's lead in

providing display cases with forced-air circulation by constructing a case wherein air currents emanate from a flue extending the length of the case and blow across the depth of the display compartment, the returning air current passing over the storage compartment.

Allied Store Utilities Co. (Husmann-Ligonier), Campbell Refrigerator Co., Commercial Refrigerator Mfg. Co., Federal Refrigerator Co., Fogel Refrigerator Co., C. V. Hill & Co., Holcomb & Hoke Mfg. Co., McCray Refrigerator Sales Corp., Ottenheimer Bros., Inc., Puffer-Hubbard Mfg. Co., Valade Refrigerator Corp., and Warren Co., were among the manufacturers of display cases and commercial storage cabinets who introduced new and improved lines during the past year.

A market that was opened up for commercial refrigeration equipment in 1932 was that of the ice cream retail establishment which manufactures its own ice cream with a "counter-freezer" machine.

In January the Knight Soda Fountain Co. put the Knight Sani-Speed freezer on the market and in March the Grand Rapids Store Equipment Corp., manufacturer of display case equipment, announced its new Cream-O-Matic ice cream making system.

The Taylor Freezer Corp., pioneer manufacturer of ice cream making equipment, underwent a reorganization in May; and these three firms, along with Mills Novelty Co., installed a considerable number of these ice cream making units throughout the summer, for the most part in the Middle West.

Most important "news" of the commercial refrigeration year was probably the rehabilitation of the New Orleans public markets.

In January came the announcement that contracts for the refrigerating equipment for the first six markets to be completed under the New Orleans markets rehabilitation program had been let, three to Copeland and three to Kelvinator.

It was also revealed that the Ed. Friedrich Co. of San Antonio, Tex., was to furnish the porcelain storage coolers and display cases for four of the markets, and the National Refrigerators and Fixtures, Inc., of New Orleans, was to furnish this equipment for the other two markets.

The six markets on which the contracts were let comprise one-sixth of the rehabilitation program, which, when completed, will embrace 36 markets, using some \$500,000 worth of refrigeration equipment. Practically the entire commercial refrigeration industry was in competition for these contracts.

At one time representatives of 36 manufacturers were in New Orleans; and the deal was deemed so important that chief executives of many manufacturing concerns were down there on the job.

The awarding of the contracts followed upon the completion of comparative tests of both ice and mechanical refrigeration, in which the market supervisors were apparently satisfied that the mechanical units were the most efficient.

Results of these tests were first made public in the March issue of REFRIGERATED FOOD NEWS, and were considered official evidence of the superiority of mechanical refrigeration over ice with respect to operating costs, maintenance of proper temperatures, and dehydration losses.

Officials of southern ice industry associations later contended that the tests were not fairly conducted, but such contentions were repudiated by statements of New Orleans city officials conducting the tests, which statements were printed in REFRIGERATED FOOD NEWS.

Following the presidential election, the possibility of legal beer aroused considerable interest and preparatory activity in the commercial refrigeration industry, and beverage cooling manufacturers hurried to prepare new types of beer coolers.

Refrigerated Trucks

While no statistics on the sale of mechanically refrigerated trucks are available at the present writing, news reports indicate a sale of a fair number of such trucks to ice cream manufacturers in the East and Middle West, and for long haul operations in the Far West.

Two of the most interesting developments in equipment for use with the mechanically refrigerated truck are the "Kold-Hold" or "storage battery" system of refrigeration developed by the Kold-Hold Co., and the Whitaker-Upp generator, brought out by the Whitaker-Upp Co. of North Kansas City, Mo.

Both of these developments had their first formal showings at the Dairy Industries Exposition held dur-

ing the latter part of October in Detroit.

The Kold-Hold system employs practically all the elements used in a direct expansion system, with the evaporator submerged in a eutectic solution which freezes at any predetermined temperature to a solid ice of flint-like hardness having a high latent heat of fusion.

A Kold-Hold assembly for a truck consists of a tank for the eutectic solution, a compressor, and a motor.

The Whitaker-Upp generator produces a constant voltage at variable speeds, for use as a power plant for electrically refrigerated systems used in truck bodies.

Kelvinator Corp., which produced the big innovation for mechanically refrigerated trucks in 1931 with its constant-speed drive, or special type of power take-off, placed a few units of this type in operation during 1932.

Early in 1932 Motor Vehicle Refrigeration, Ltd., of Oakland, Calif., announced a complete assembly for a refrigerated truck, the equipment including a power take-off device, and methyl chloride condensing unit.

Batavia Body Co. of Batavia, Ill., has turned out a number of refrigerated truck bodies cooled by Frigidaire equipment plus a power take-off arrangement.

The 1932 line of refrigerated trucks brought out by Hercules Products, Inc. (a subsidiary of Servel, Inc.) included a mechanically refrigerated truck assembly consisting of a Servel refrigerating unit and coils, a motor,

Review of 1932

This is the third instalment of the editor's resume of news in the refrigeration industry during 1932.

Previous instalments have discussed new companies, low prices, dealer difficulties, chiseling, technical advances, sales tax, sales figures, public utility merchandising, department stores, air conditioning, and changes in personnel.

and a gas engine. The gas engine powers the compressor on the road, the motor during stop-overs at places where electric current is available.

Meyer Body Co. of Buffalo, and Safety Refrigeration, Inc., of Chicago announced gasoline engine-operated refrigerated trucks during the course of the year.

Development of equipment which maintains proper and constant temperatures in refrigerating units utilizing solid CO₂ as the refrigerant during 1932 may make solid CO₂ refrigeration a more important factor than ever in the refrigerated truck field.

The three most important units of this type developed during the past year were the York "Kold-Trol" system, the unit developed for use in Hercules refrigerated truck bodies, and the Fitz Gibbon & Crisp "Icefin" unit.

The first two named are quite similar, both using refrigerating effect furnished by the solid CO₂ as a condensing medium, for the methyl chloride with which the evaporator is charged. Temperature control is through a thermostatically controlled valve in the gas line.

The "Icefin" unit controls temperatures by regulating the rate of heat transfer, this being accomplished through the adjustment of resistance pads with which the bottom of the refrigerant chamber is fitted.

Quick-Freezing

The year 1932 marked a recession in activity among practically all quick-frozen food producers save Birdseye (General Foods).

Indianapolis Abattoir Co. (Sally Lee Frigid Meats) went out of business. Swift, Armour, and other leading Middle West packers have practically suspended quick-freezing operations.

More than 400 retail food stores in the East are now selling Birdseye. Frosted Foods, however. All of these stores have been selling quick-frozen meats, fish, vegetables, and fruit on a profitable basis.

There are now 12 Birdseye quick-freezing stations in this country using the multi-plate freezer to quick-freeze almost every type of product which lends itself to this process.

The plan of the Frosted Foods Sales Corp. for the present seems to be a more intensive cultivation of the densely populated areas in the East in which Frosted Foods have been introduced. Retail stores in the following states are now selling the Birdseye product: New York, New Jersey, Pennsylvania, Connecticut, Delaware, New

Hampshire, Maine, Maryland, Massachusetts, Vermont, and Rhode Island.

The Frosted Foods Sales Corp. educational and institutional campaign on the West Coast has progressed to a point where the product has been placed in a few stores for trial sale.

The production and distribution of frozen fruit and frozen fruit juices for retail distribution (as distinguished from the cold pack products put up by canners for institutions and restaurants) was not much above the zero mark in 1932.

Tom Huston, whose quick-freezing of Georgia peaches created such a stir in 1930, has practically passed out of the quick-freezing arena. Borden's and National Dairy, which attempted to freeze and market frozen orange juice on a large scale, have practically ceased operations.

Lack of proper refrigerated transportation is said to have been one of the reasons for the failure of this enterprise, and as recent tests have indicated that refrigerated railway cars can handle frozen products properly, there may be a resumption of activity in this particular division of the quick-freezing industry.

Patents

Struggles over patent control also have into sight in 1932. Industry executives definitely reached the conclusion that the time had come to protect the integrity of their patent rights, and so do something toward stabilizing the electric refrigeration business.

In April, the McKee Refrigerator Co. of Cobleskill, N. Y., was refused the right to register the trademark "Iced-Aire," the court believing that the name too closely resembled the word "Frigidaire."

Following month, Servel, Inc., lost its suit against a New Haven (Conn.) Norge distributor, in which the manufacturer charged infringement of a low-pressure control patent.

A few weeks later, the Supreme Court upheld a lower court's decision that the term "Dry-Ice," used by the Dry Ice Corp. of America, could not be registered as a technical trade mark, and thus denied the company's two petitions alleging infringement of the registered mark.

In June, a bill of complaint against a Brooklyn food merchant, charging infringement of two cross-fin coil patents, was filed in New York by Cleveland's Guardian Trust Co., owner of the patents.

Next month, Kelvinator Corp. filed suit against Domestic Industries, Inc., of Mansfield (Ohio), alleging infringement and contributory infringement on two Kelvinator patents on shaft seals for electric refrigeration compressors.

On Sept. 19, Iowa's U. S. District Court ruled valid Frigidaire Corp.'s claims on use of a "cold control" with an electric refrigerator, and declared the company's patents on the device infringed upon by apparatus sold by a Majestic refrigerator dealer in Des Moines.

As a result of winning this infringement suit, Frigidaire, in the next few months, licensed four refrigeration control manufacturers to make cold controls, and 48 manufacturers of household refrigerators were licensed to use the controls.

In December, the U. S. District Court of eastern New York ruled invalid patents held by E. I. du Pont de Nemour Co. on low viscosity nitrocellulose lacquer.

Long-Term Guarantees

Just when other members of Nema thought they had lined up everybody for a return to a standard one-year warranty, as opposed to the three-year guarantee which became so prevalent last year, General Electric upset the apple cart and announced a four-year service plan. Westinghouse shortly followed suit.

This "four-year service plan" is equivalent to a four-year guarantee (replacement parts and labor) on the hermetically sealed refrigerating machine, and a one-year guarantee on the cabinet.

Almost all the rest of the industry is bitterly opposed to long-term guarantees, which many executives term, "unsound."

In September General Electric brought out a "junior" line of electric refrigerators with a conventional type unit. These bear only a one-year guarantee. The Frigidaire low-priced line carries a one-year guarantee, as do Kelvinator, Leonard, and others. (Early in 1933 Frigidaire, Norge, and Potter announced a one-year guarantee on all equipment.)

Advertising

Advertising and sales promotion by electric refrigeration manufacturers felt the force of depression during the past year.

In sympathy with the general economy program practiced throughout the industry, many house organs were suspended, organization promotional material did not burden the mails in such volume, and elaborate promotion schemes were few and far between (notable exception: G. E.'s aerocar, by means of which G. E. appliances are

taken directly to the homes of prospects).

Advertising was reduced substantially in one bracket—national magazines. Newspaper, radio, trade paper, billboard, and direct mail appropriations held up fairly well.

But a concerted drive on the part of distributors all over the nation helped force factory advertising departments into slashing their national magazine advertising budgets ruthlessly. Many manufacturers ceased national advertising altogether.

Radio Programs

Although radio advertising was used to a certain extent by several large manufacturers, General Electric and Frigidaire took the lead in this field with substantial appropriations for extensive advertising over the air.

On Feb. 1, Frigidaire started a three-times-a-week radio campaign which lasted three months. Carried by 57 stations, the Frigidaire program featured popular melodies played by a 16-piece orchestra, and talks on women's names and their derivations by CHARLES B. DRISCOLL.

Early in March, the Electric Refrigeration Bureau conducted a broadcast over NBC's blue network with CHARLES EDISON and Miss KATHARINE FISHER as the speakers.

Starting in March and continuing through the spring was a twice-weekly radio program presented by General Electric Co., with OSCAR of the Waldorf and Madame SYLVIA, Swedish masseuse and dictator of exercises and diets in Hollywood's movie lots, featured on the programs.

P. B. ZIMMERMAN, manager of the G. E. refrigeration department, discussed new low prices on the company's program on March 14.

"The largest number of great voices and musicians ever to appear on a single radio program" was featured by General Electric's May 1 broadcast. Early last winter, HEYWOOD BROWN, noted columnist, began a series of G. E. winter radio programs.

Featuring numbers by stars of the Metropolitan Opera Co., General Electric inaugurated on Christmas day a series of weekly radio broadcasts in which no commercial announcements are used.

Public Contests

Among the new schemes employed by some manufacturers during 1932 to interest the general public in electric refrigeration was the "open contest," in which anyone might compete, with substantial prizes for the winners.

In March, the General Electric Co. announced a public contest, in which all entrants were asked to write the concluding chapter to a mystery story, written by Chann Patrick and broadcast over a national radio hook-up.

Also opened in March was an essay contest sponsored by Sears, Roebuck & Co., with \$4,914 to be distributed among writers of the best essays on "What Features of the New Coldspot I Like Best—and Why."

Frigidaire Corp. conducted a "public preference" contest by radio in March, and in July the Leonard Refrigerator Co. launched a campaign to find the oldest existing Leonard ice box, with a prize of \$500 offered to the owner of the oldest box, and smaller prizes given by distributors to the owners of the oldest Leonards in their territories.

During the summer, Norge Corp. ran a cross-word puzzle contest for the public, in which one and a half million persons enrolled.

Opened to the public Sept. 15 was a sentence-building contest by Frigidaire Corp. Prizes were five automobiles, 10 Frigidaire, and 30 cash prizes. Entrants were asked to write a 16-word statement, each word beginning with successive letters of the phrase, "Greater Food Space."

Another fall contest was the letter-writing competition held by Westinghouse Electric & Mfg. Co., with 50 refrigerators offered as prizes. In November, Norge dealers were authorized to open jig-saw puzzle contests for all persons buying Norges between Nov. 14 and Dec. 23.

General Electric instituted an essay contest in November, with prizes offered for best letters on "How Advertising Over the Radio Can Be Improved."

Century of Progress

During 1932, many large manufacturers made plans for exhibiting their refrigerators at A Century of Progress to be held in Chicago this year.

In January, Norge Corp. announced that it would have an exhibit in the Electrical Building. Since that time, plans have been made for three, and possibly four, Norge displays at the fair.

Copeland Products, Inc., filed its application for space at the exposition in February. Following month, Kelvinator completed negotiations with fair officials to have a display in the Electrical Building.

In July, General Electric, Stewart-Warner, and Westinghouse announced that they would have displays at the fair, and in August came word that Servel, Inc., would have an exhibit at the exposition.

ON THE AIR EVERY SUNDAY

World's Greatest Voices

SCHIPA

PONS

Mc CORMACK

PONSELLE

MARTINELLI

BORI

INTRODUCING THE G-E SALESMAN *to millions of homes*

LETTERS FROM LISTENERS

These excerpts are typical of thousands of letters—indicating the effectiveness of the G-E Program in creating sales opportunities

"I enjoy your Sunday programs more than any other and to partially repay you for listening to such enjoyable concerts, have been able to induce some of my friends to buy your refrigerators and have one myself."

"I have long been a listener to your programs, but only the past week have I been the proud possessor of a General Electric Refrigerator."

"Now I can feel that I am really a G-E Circle Member, as I am the proud possessor of a new G-E Refrigerator."

"There is a possibility that I might be interested in an electric refrigerator. But as I don't know the nearest representative here, please see that I get some printed matter, etc., or have some one call the latter part of next week."

"I am a darn good prospect—have been shown all models but my mind was made up to a G-E."

"I have a new G-E Refrigerator, and would appreciate any other literature you may have relative to same."

"I have just purchased a new G-E electric refrigerating machine and I feel like I can write to you. I would appreciate a receipt book on electric cookery, also information on your new G-E coffee percolator."

"I have a G-E stove and am also thinking of getting a General Electric Refrigerator."

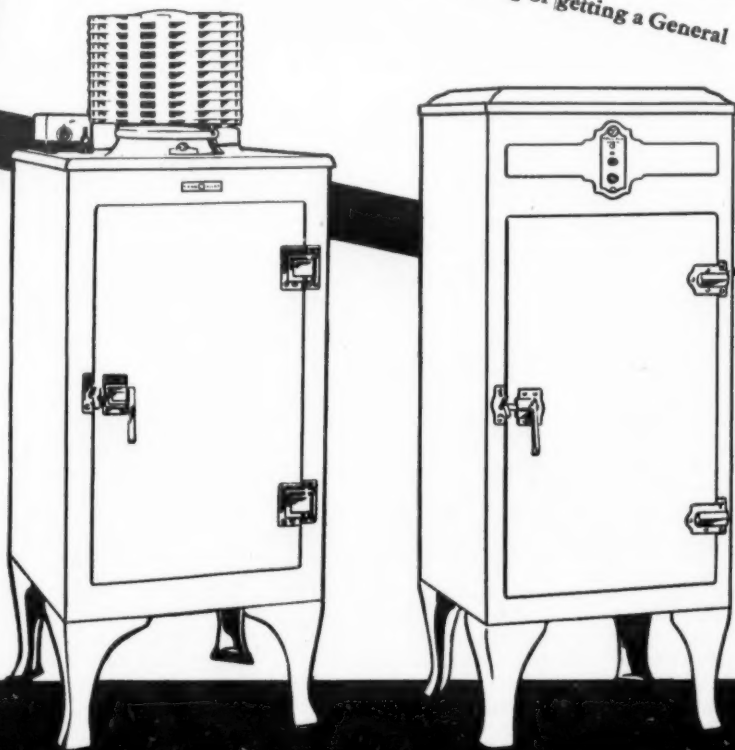
THE GENERAL ELECTRIC radio program helps the G-E refrigerator salesman get inside the prospect's home. It is an effective way to get favorable interest and makes sales easier.

The program covers the entire country through a coast to coast network of 56 stations, and is one of the most popular on the air. Every Sunday evening (9 to 9:30 E. S. T.) the world's most famous opera stars sing the songs best loved by all the people. Thousands of prospects are reached, thousands of direct sales leads are found. The G-E salesman has an introduction to millions of homes.

In addition to radio, powerful advertising and merchandising campaigns will be employed in 1933 to help retailers sell G-E refrigerators

—including national magazines, newspapers, outdoor posters, spectacular signs, store and window displays, direct mail, literature, salesmen's training courses, visual presentations and other activities. General Electric retailers and salesmen are going to be backed to the limit in 1933.

Behind General Electric advertising and sales promotion is the combination of two great products—the famous G-E Monitor Top Refrigerator and the low priced G-E Junior. An overwhelming public preference, plus the absence of expensive servicing, makes quicker and easier sales for General Electric—resulting in greater NET PROFIT for the G-E retailer. General Electric Company, Electric Refrigeration Dept. Section DF 12, Hanna Bldg., Cleveland, O.



One
OUT OF
THREE
IS A
G-E

GENERAL ELECTRIC

ALL-STEEL REFRIGERATOR

DOMESTIC, APARTMENT HOUSE AND COMMERCIAL REFRIGERATORS, ELECTRIC WATER COOLERS

MASON & BURRITT TO VISIT DISTRIBUTORS

(Concluded from Page 1, Column 5)

Burritt will part, Mr. Burritt going to Tampa, Fla., to confer with officials of the Kelvinator-Stanley Co. in Tampa.

From that city, Mr. Burritt will go to Jacksonville, Fla., to visit executives of the Graybar Electric Co. and the Cain Radio Co.; Biloxi, Miss., for a meeting with the personnel of the Mississippi Power Co.; New Orleans, to confer with members of the organization of Philip Werlein, Ltd., and the Radio Specialty Corp.; Houston, Tex., for a session with leaders of the Houston Light & Power Co. and Straus-Bodenheimer; Dallas, Tex., where he will meet with the refrigeration division of the Graybar Electric Co., and Adleta Show Case & Fixture Mfg. Co. officials; and to Ft. Worth, Tex., for a conference with executives of the Carroll Moore Co., and the Mathes Co.

In Little Rock, Ark., Mr. Burritt will meet with officials of 555, Inc., and Hellis & Co. From Little Rock, he will go to Memphis, Tenn., for a meeting with members of the organization of McGregor's, Inc.; Birmingham, Ala., for conferences with executives of the Birmingham Power Co. and the Clark & Jones Piano Co.; Montgomery, Ala., to visit the Matthews Refrigeration Co. and then to Atlanta where he will meet Mr. Mason.

From Atlanta, the two will travel toward the East, making their first stop at Charleston, S. C., where they will confer with the refrigeration division of the Carolina Power Co. and the Gas Engine and Electric Co.

Columbia, S. C., where they will confer with executives of the Broad River Power Co. will be the next stop on their itinerary. Meetings have been scheduled with sales representatives of the Southern Public Utilities Co. and the Glasgow-Allison Co. in Charlotte, N. C.

Lynchburg, Va., is the next scheduled stop, and from there Mr. Mason and Mr. Burritt will go to Roanoke, Va., to visit Thurman & Boone Co., Inc.; Richmond, Va., for a meeting with executives of Richmond Hardware Co., and the Kirkmyer Electric Co.; Washington, D. C., to confer with officers of Southern Wholesalers, Inc., and Barber & Foss Inc.; Pittsburgh to meet with members of the C. R. Rogers Co., and the J. A. Williams Co.; Wheeling, W. Va., for a session with company heads of the Earle Rogers Co.; and to Huntington, W. Va., where they will meet with members of the Emmons Hawkins Hardware Co.

INSIDE DOPE

By George F. Taubeneck

(Concluded from Page 1, Column 1)

the streamlined, V-radiator Reo Royale which was a forerunner of the style motif you see in practically all 1933 cars.

The new Copeland, due in February, will undoubtedly have distinctive lines.

BILL GRUNOW has finally whipped his production line into shape, and has seen more than 300 units go down the assembly line already.

Grunow distributors may expect samples soon, because the first shipments will be made from the Briggs plant in Detroit (where the refrigerators are assembled) by the end of this week.

Bill expects to be producing 250 units a day by the first week in February, and 500 units a day before the end of the month.

Distributors and dealers are howling for stronger "scare" copy in ad-

vertisements mentioning refrigerants, Advertising Manager Duane Wana-maker tells us. If the temper of the home office remains the same, though, they probably won't get it.

Westinghouse will probably bring out a room cooler designed for use in homes, offices, and stores in the very near future.

Following the success of the distinctively styled Westinghouse water cooler, the new room cooler will likely be highly decorative.

Last season Westinghouse put out a room cooler in a closely restricted territory and watched it operate under conditions of actual use. The 1933 unit will probably be quite similar to the one tested in 1932, which had a capacity of approximately one ton of refrigeration.

In addition to cooling, this unit cleans and dehumidifies the air.

It seems presumable that the 1933 Westinghouse room coolers will include heating and humidifying elements in some models. These room coolers may be used as single units, or on a multiple hook-up.

COPELAND MARKETS TWO LARGE CONDENSING UNITS

(Concluded from Page 1, Column 4)

that at each third part of a revolution a compression stroke is completed.

The new 2-ton unit is equipped with a low-pressure control with high pressure cut-out (for multiple installations) as standard. It can be furnished with temperature control on order. It comes complete with starting equipment.

The new ½-hp. unit is a water-cooled machine, designed to fill a gap in the Copeland line of small condensing units. It has a single-cylinder belt-driven compressor and is rated at 246 lbs. capacity (A.S.R.E.).

Low Tells Dealers How to Display And Merchandise Norges

(Concluded from Page 1, Column 5)

bought a Norge Rollator refrigerator on the day when President Taft was inaugurated, it would still be running satisfactorily, you're making your goods talk. You're making your display say something worth while.

Within the store, however, signs are of little value in making an attractive display, the speaker said. "Women come to town to see merchandise, not signs. Let the goods speak for themselves," was his way of putting it.

Of proper arrangement in refrigerator display, Mr. Low said. "The arrangements in most refrigerator departments say just one thing—Come look at 25 refrigerators, madam."

Pull Unit Out of Line

"Naturally, she says, 'I haven't the time to look at 25 refrigerators.' But, if you pull a unit or two out of the line, open the door, and put it where Mrs. Shopper can see it, she'll stop to look it over, and the first thing you know she'll be paddling through the whole department."

"The Prince of Wales can inspect the whole British army, and never see a man. All the soldiers are in perfect rows. No one man stands out from the others. The same thing applies to refrigerator displays."

"You don't pay much attention to a whole row of chorus girls, because they all look alike at first, but when the featured danseuse trots out, you begin to look at her legs, then compare them with the legs of all the girls behind, and before long, you're taking a good look at every girl in the chorus."

"The same principle applies in exhibiting refrigerators. Attract the woman's attention with one unit or two, and she'll look at every refrigerator on the floor before she goes home."

Drives Prospect Away

A poor display not only fails to attract a prospect, but actually drives her out of the store, Mr. Low said. "A couple of dusty models standing in a corner almost shout, 'Go out and buy a refrigerator somewhere else,'" he told the Norgemen.

"To have an attractive display, you have to show your goods in proper quantity," Mr. Low averred. "If you have just one refrigerator on the floor, you'd better throw it away or buy some more to show with it."

"Quantity supplies a basis for comparison. You can't sell refrigerators with a one-unit display unless the salesman is a wizard or the prospect is going to buy a refrigerator or bust. Two units aren't much better."

"The store that has at least five refrigerators in its display will get the business. Then a woman doesn't have to shop around to get a comparison."

"Tail end stocks don't sell because they're on display in less than selling quantities. A smart retailer uses the principle of abundance in his displays. It makes folks want to buy."

"If a kid sees one tree loaded with apples, he goes to the owner and asks meekly if he can have one. But if he sees a whole orchard of apples, he climbs the fence and steals a shirt-tail full. It's just the principle of abundance at work," Mr. Low said.

Effect of Price Range

"If you have one refrigerator on display for \$150, the prospect thinks that's a high price. But if you have several units, ranging in price from \$150 to \$250, the first price isn't so high, and the prospect isn't scared out."

When several makes of refrigerators are being displayed, equal numbers of models of all makes should be used, he advised. "Otherwise," he said, "the prospect will look at the small display of one make and say, 'Hmmm, they don't sell many of that kind.'"

Before concluding his remarks on goods display, Mr. Low said this:

"Goods display is the oldest, most powerful, least understood, and most abused of all selling forces. Whether you know it or not, you (distributor) are spending from \$100,000 to \$1,000,000 a year in your territory for goods display, so you'd better make use of it."

"And don't be afraid to give proper display to higher-priced goods. By constantly displaying low-priced stuff, retailers are pushing the American public farther and farther down into the bargain basement."

Mr. Low then turned to the subject of retail salesmanship, and began with a discussion of "the approach." Of this he said:

"When a salesman says he can't find any good prospects, it's a cinch that his approach is all wrong. In making his approach, a good salesman never asks a lead question which will cause a prospect to state her position, and he promises to tell her something she wants to hear."

"Very few trick approaches are effective, because salesmen know they're using tricks, and can't put any conviction in their words. A salesman should always know his prospect's name, financial position, and whether she owns a refrigerator, before making a call."

The speaker refuted what he termed a popular belief that there is no longer a need for selling the idea of electric refrigeration, and said, "A salesman still has to sell the idea so that the prospect will feel good about buying, so she'll feel justified in making the purchase, so she'll feel the economy of electric refrigeration."

Mr. Low said that the recommendation of women has sold far more electric refrigerators to other women than have all the refrigerator salesmen in the country. Here is his way of saying it:

"Women gush. They're the greatest gushers in the world. Their gushing convinces other women. So when one woman who has a new refrigerator says to another woman, 'Oh, my dear, it's simply ga-rand,' the second woman is set on the idea of having a new refrigerator, too."

"But the salesman can't gush. When a man gushes to a woman, she won't listen. So the salesman's job is to justify the purchase to the woman, make her feel good about buying, because she already wants a refrigerator, but hasn't bought because she couldn't see that it was right to spend the money."

Warns Against Positive Statements

Mr. Low warned against the salesman's use of positive, specific statements in presenting the sales story. These two points he brought out:

"Don't tell a woman *exactly* how much she'll save each day because of her electric refrigerator. If you get over-enthusiastic and say, 'Mrs. Smith, this refrigerator will save you 50 cents a day,' Mrs. Smith will come right back with, 'You're cock-eyed. I don't even spend that much a day.'"

"Instead, point out how she'll save five cents here, another five there. Then she'll believe you. The only way to get money away from a woman is to take it away from her a nickel at a time."

"Don't say, 'Mrs. Smith, with this refrigerator in your home, you'll need go to market only once a week.' She won't believe it. Instead, show her how the unit will save several trips to market, but don't give her a definite number," the sales expert advised.

Of vividness in sales presentation, he said, "No salesman ever got anywhere by just rattling off cold facts. He has to use word pictures and expression to get the proper effect. It isn't enough that a woman listen to a presentation—she has to feel it."

Health Story

"Make the woman feel the health story. Show her the appetite value of an electric refrigerator. Tell her that five-sixths of all the money we spend for food goes for variety and appetite appeal."

"Tell her that we could live healthfully for \$2 a month, if we didn't care about these things. Show her how an electric refrigerator helps her keep a larger variety of food on hand, and how it makes that food more appetizing."

That a good sales presentation must take plenty of time was another of Mr. Low's assertions. He said at least an hour and a half should be devoted to a refrigerator presentation.

"A prospect must be held near a certain refrigerator long enough to get to know that unit. Every product has a minimum average buying time."

Effect of Several Lines

"No retailer can handle several makes of refrigerators and do a first-class selling job, because he can't keep a prospect near one make long enough, or talk long enough about it, to give her confidence in it."

"If you've known me just five minutes, and I 'touch' you for \$10, you say, 'The nerve of that guy.' But if you've known me for two weeks, if you've been working with me, and I ask for a loan, you say, 'Sure, fella, here you are.'"

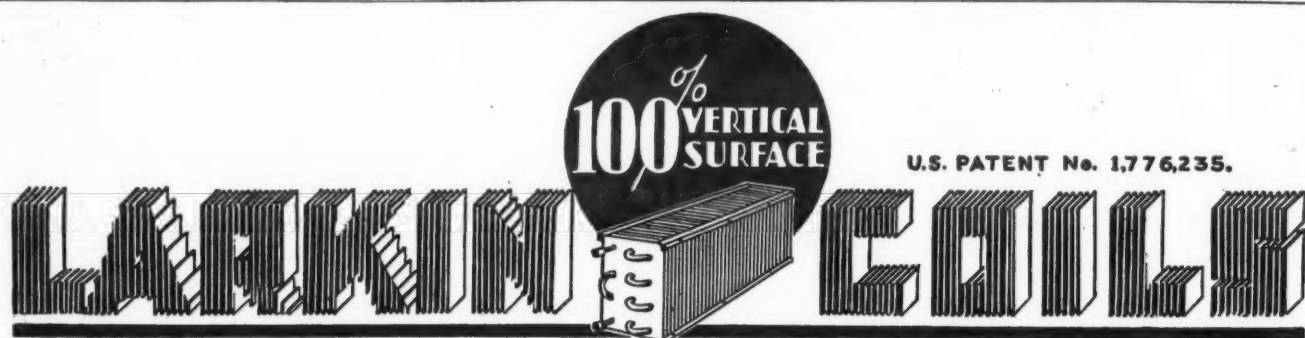
"The same principle applies in selling a woman a refrigerator. Let her get acquainted with a certain unit, and she'll buy it. You can't do that if you have a lot of makes standing around. About all you can do then is pray that someone will drop in and buy one."

Mr. Low has his own ideas about talking mechanical features to a woman. His advice to the Norge distributors was:

"Play up your refrigerator's simplicity. It's a lot of bosh that women don't know anything about mechanisms. When the old man brings home a bunch of complicated wheels and levers, a woman will turn up her nose and say, 'Bah.' She's already thrown away too many of papa's wheels."

"But show her how simple your unit is, and she'll be sold on it."

In conclusion, Mr. Low said, "Display your goods so people will stop to look at them, use salesmen who will help the merchandise tell its story, and advertise to bring persons to your store and make them declare themselves as prospects."



Have Lowered the Cost of Refrigeration for More than 38 Thousand Retailers

Eliminate Defrosting and Dehydration Problems with these Efficient Coils

LARKIN REFRIGERATING CORP'N.

Originators and Manufacturers

ATLANTA, GA.

STANDARD FACTORY EQUIPMENT WITH—

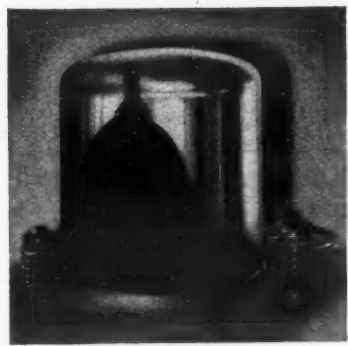
COPELAND : SERVEL : WILLIAMS-ICE-O-MATIC : MAYFLOWER
CARRIER-BRUNSWICK-KROESCHELL : UNIVERSAL : ZEROZONE
KULAIR : M & E : MODERN : STARR : APEX
MOHAWK : DICELER : H. M. Robins Co.—Export, and Others

MAJESTIC

steps to the front with

~~ELECTRO~~ SEALED

REFRIGERATION



"Secure as the nation"

WHAT is the big need, today, in electric refrigerators?

Lower operating costs? No! Most any owner can show tangible *savings* with electric refrigeration.

Lower prices? No! The public has had two years of "bargains" and is getting back to sane buying.

Greater safety? No! Eight million automatic refrigerators in constant use daily prove their safety.

Greater dependability? Yes! Without question, the public demands an electric refrigerator that will *give* service and not *require* service.

With its new line of 1933 models, Majestic completely meets the public's demand with *ELECTRO-SEALED REFRIGERATION*.

Here is a refrigerating unit so carefully designed and so precisely built that it can be *ELECTRO-SEALED for life*—and for safety—within a steel dome.

"Secure as the nation" against any dangerous or harmful influence—completely and positively sealed against dirt, dust, moisture and abuse—here, most emphatically, is *dependable refrigeration!*

Nor is Majestic's *ELECTRO-SEALED* unit the sole contributor to dependable refrigeration in the new 1933 line.

Constantly maintained food compartment temperature is assured by Majestic's Isolator-Wall Construction wherein scientific wall design and triple-type insulation cleverly asphalt-sealed, combine to isolate interior from exterior.

Majestic's "Stay-Kold" Defroster is another contributor, maintaining a cycle of refrigeration and keeping ice cubes intact even during the defrosting period.

The Auto-reset Protector, "Stay-Brite" shelves, "Freeze-out" trays—these are other contributors to dependability and convenience, in this new and ultramodern refrigerator line.

And Majestic cabinet designers have re-styled the lines on these new models to the point that a beauty never even dreamed of in refrigerators will make every owner intensely proud of her Majestic.

Very soon, now, your distributor will be ready to show these new models. What a surprise is in store for you! What immense sales possibilities Majestic refrigerators will create for you, when you display this line in your windows, and on your floor.

Unquestionably, Majestic dealers will have the "edge" in 1933! And those of you who are farsighted will be right on hand at the first showing. Be on the watch for your distributor's announcement.

GRIGSBY-GRUNOW COMPANY, CHICAGO, and affiliates, with factories at Chicago; Toronto; Bridgeport; Oakland; London, England; and Sao Paulo, Brazil
Manufacturers also of MAJESTIC RADIOS

what is MAJESTIC
going to make
in 1933?

Majestic
~~ELECTRO~~ SEALED
REFRIGERATION

ELECTRIC REFRIGERATION NEWS

The Newspaper of the Industry

Published Every Week by
BUSINESS NEWS PUBLISHING CO.

Also publishers of REFRIGERATED FOOD NEWS (monthly) and REFRIGERATION DIRECTORY and MARKET DATA BOOK (annual)
550 Maccabees Building, Woodward Ave. and Putnam St.
Detroit, Michigan. Telephones: Columbia 4242-4243-4244

Subscription Rates:

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Postal Union: \$3.00 per year; 2 years for \$5.00
Canada: \$6.00 per year (U. S. Money)
All Other Countries: \$5.00 per year
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Catalog Copy

WALTER DAILY, advertising and sales promotion director of General Electric's refrigeration department, gave several hundred Detroit advertising men an earful at a recent meeting of the Detroit Adcraft Club. Walter's speech, briefly reported on page 7 of this issue, was an entirely convincing presentation of the case for "reason-why" copy.

In dozens of fields, he pointed out, there has been a big swing toward "reason-why" copy, and away from mere "name publicity." Advertisers who painstakingly test the appeal of their copy almost invariably have turned toward the type of advertisement which tells prospective customers just what they will get and why.

Department store executives by the score have told us in the last six months that even women are interested in specifications today. Having been stung on all sorts of cheap merchandise during the last three years, they are demanding to know exactly how specific products are made, and of what. Never before, they declare, has there been such a demand for information on construction details, for salespeople who can tell a good product story, for "catalog" advertising copy.

In advertising electric refrigerators this year, it may be well to pose for each piece of copy the question: "Does it give reasons why prospects should purchase it?" Also: "Does this copy attempt to prove that we are manufacturing quality merchandise, by explaining details of construction and points of superiority?"

Critical Distributor

Following a national convention not long ago a Pittsburgh distributor gave us a criticism of ELECTRIC REFRIGERATION NEWS which we should like to pass on as being pertinent to this discussion. Our conversation was about as follows:

"Of all the trade papers we take or which come free, your paper is the only one which we follow because of its editorial content," he began.

"Is that so?" we beamed.

"But," he continued, "that doesn't mean I like your sheet. In fact, I've got a big kick against it."

"And what's the complaint?"

"Your advertising. It never tells me anything. Always looks nice. Lot of pleasant words and 'go-get-'em-fellers' spirit. But no information. I want to be told about the engineering features of these products. I want to know what they'll do, and what they won't."

"Pastures on the other side of the fence always look greener, you know, and every once-in-a-while I thumb through your paper to see what competitors might have to offer. But all I find is a bunch of pep hokey, with maybe at the bottom in small type: 'write, wire, or phone for further details.'"

"Now I'd like to sit down and study a situation a little bit by myself before writing, wiring, or phoning anybody. I don't want some high-powered field man coming down here to hound me until I have to throw him out, nor do I want the home office of the line I now represent to get panicky because of a rumor that I'm about to quit 'em."

"If your advertisers would only keep us posted on what their machines will do, what gadgets and features they've got, the styles and sizes and prices of their models, I'd feel like I was getting a real service. Your specifications issues were great; yet they were pretty cold-blooded. I'd like to see the various machines explained by their manufacturers in terms of why customers will want them."

Want to Justify Purchases

Psychologists and sociologists who have studied the depression tell us that one reason buying power is dammed up is that it has become fashionable to economize. People want things as badly as they ever did; but they have become sold on the idea that they shouldn't spend in these times. What they want is a set of reasons why they should purchase an object they desire—they want to be able to justify their expenditure before family and friends.

"Catalog" and "reason-why" advertising copy, then, should be the order of the day.

Independent Service

IMPORTANT but unheralded has been the rise of independent service companies all over the nation during the last couple of years. On pages 10, 11, 12, 13, and 14 of this issue is printed a list of more than 900 such concerns. This list is at least three times larger than any previous available list, and indicates a remarkable growth of this type of organization during the last year.

Independent service companies have sprung up and become well established in spite of the opposition of the larger manufacturers. Manufacturers such as Frigidaire and Kelvinator have permanent national service organizations which, they feel, should be able to handle all service requirements on their own particular installations.

Moreover, they argue—and on excellent grounds—that men trained in their own schools should be best fitted to service their machines, and that unschooled service men might do unsatisfactory jobs and lose good will for the manufacturer. Hence they have refused to sell parts to the independent establishments.

Genesis of Service Companies

Mortality among distributors (leaving whole service departments unemployed), plus the steady influx of new graduates of service schools, has given the industry an oversupply of trained service men. The most enterprising of these have set up in business for themselves.

Their godsend has been the arrival of new manufacturers in the industry. Concerns struggling to get a foothold in the industry, new distributors who have been jobbing other products, and large retail outlets such as department stores have all been thankful that independent service companies were available. Department stores, especially, have been excellent customers of such concerns.

Refrigeration Supply Houses

Another group of related independent concerns is just now coming into being—refrigeration supply houses. A notable example is Refrigeration Products, Ltd., of Los Angeles, a jobbing house operating over the entire Pacific Coast territory, and representing manufacturers such as Fedders, Detroit Lubricator, Kulair, Automatic Reclosing Circuit Breaker, and others.

Concerns such as Iceless Refrigeration Accessories in Philadelphia and George Monjian's Chicago Refrigeration Service Co. specialize in replacement parts for obsolete equipment and orphan machines. Still other companies do a good bootleg business in pirate parts for well-known makes.

Whatever it means, and however it may be considered by the older organizations, the establishment of independent service companies and refrigeration supply houses must be recognized as a definite movement in the industry.

Now that the industry seems to be moving from long-term guarantees, it does not seem inconceivable that independent refrigeration service companies may some day attain the status and importance that independent garages and service stations now hold in the automobile industry.

An Editor on Wheels

Stories of Interesting PLACES in the Refrigeration Industry

By GEORGE F. TAUBENECK

Muskegon, Mich.

A strong, rugged city peopled by strong, rugged descendants of strong, rugged pioneers, Muskegon has a virility and a hardihood which have successfully resisted any gloss or effete-ness which its growth as a city might have imposed upon it. This, in spite of its sheltered natural location (it is situated on Muskegon Lake, a natural harbor off Lake Michigan).

Ever hear it called, "the Sawdust City?" Well, it is, and here's why:

Decades ago Muskegon was almost as primeval as the forest in which Hiawatha found the birchbark for his canoe. It was both marshy and heavily wooded. In fact, its name was derived from a Chippewa Indian word meaning "river with marshes."

In its early days it was a logging center, and at a steady pace the forest was hewn down and carted away. First sawmill was built in 1837; six mills were going strong in 1888 when Muskegon won some sort of world championship by cutting nearly 800,000,000 board feet of timber.

Of course there were tons and tons of sawdust produced. This sawdust was dumped into the marshes and swamps, all of which eventually became hard, dry land. Muskegon is literally a city built on sawdust.

A great fire shortly before the turn of the century wiped out the sawmill business; but in 1905 the ruined city had been reborn as a town of diversified industries.

Today it is largely industrial. Norge electric refrigerators; Brunswick-Balke-Collender billiard, pool, and bowling supplies; Continental automobile motors; Shaw-Walker and Browne-Morse office furniture; piston rings, castings, and other automotive parts—these are among the more important Muskegon manufacturers.

When we say "Muskegon," we include Muskegon Heights and North Muskegon, both of which are integrally tied up with Muskegon proper in this industrial community. All together they have more than 70,000 inhabitants.

Predominantly Dutch is the citizenry. Honest, dependable, hard working folk, they pay their bills, own their own homes, and live uprightly according to their standards. It is a church-going, Sabbath-observing, God-fearing community.

No little historical pride is evinced by the citizenry. They all know, for instance, that Pere Marquette spent the night there two days before he died; and that in 1634, 13 years after the Mayflower anchored off Plymouth, Jean Nicolle (one of the earliest of the French explorers) visited the spot.

Some of the storekeepers can tell you great tales of the Ottawa chieftain, Pentalouan (grandfather of the mighty Pontiac) who lived on the site of Muskegon. Pentalouan was one of the Indian warriors at the battle of Starved Rock.

If you stay a day or two you will undoubtedly be shown the grave of Jonathan Walker, who was arrested and convicted for transporting runaway slaves to free soil on his schooner, and who was consequently—by Federal Court order—branded on his right hand with the letters, "SS" (slave stealer). That little incident is counted as one of the contributing causes of the Civil War. His modest obelisk monument in Muskegon shows a relief of his branded hand. (Incidentally, John Greenleaf Whittier wrote a poem about that hand.)

Muskegon amusements are chiefly athletic. The town goes wild over football. They grow 'em big in Muskegon, and many of the local prizes make good on University of Michigan teams. Oosterbaan and Flora, who were probably the greatest pair of ends in history (possible rivals: Ott and Romey of Wisconsin, Anderson and Kiley of Notre Dame) are classic examples. Swimming, skating, boating, hunting, fishing, and other simple outdoor sports comprise the town's chief diversion. With theaters, dancing, and other metropolitan amusements, Muskegon has little traffic.

It is still a pioneer city—at heart and on the surface.

Buffalo, N. Y.

Just one year more than a century ago Buffalo was reborn. It was incorporated as a city of 10,000 inhabitants in 1832, after having arisen from the ashes of its former self left by the incendiary British several years before.

Within that century Buffalo has increased in size 60-fold. It has become a great, rugged, industrial city, and one of the nation's most important lakeports.

Only three other cities in the United States are said to enjoy a volume of water commerce equivalent to that which feeds through Buffalo; and the value of its shipping is said to exceed that of any other inland port.

Millions of bushels of wheat come down the lakes each year to be stored in Buffalo's impressive row of elevators, and later shipped to all the world's wheat importing cities. This great traffic in wheat has given Buffalo's citizens cause for claiming that they live in the chief grain center of the earth.

Lake Erie and the Erie Canal furnish one well-traveled water route; Lake Ontario and the new Welland Canal provide another.

Because of the volume of traffic carried over the 13 railroads which serve Buffalo, its citizens make another claim: that it is the second largest railroad center in the United States. And when we are told that some 800 train arrivals and departures are posted on Buffalo boards daily, we shan't be inclined to dispute the boast.

What is Buffalo besides a port? Well, it is a second Motor City, for one thing. Pierce-Arrow cars are built in Buffalo. Chevrolet and Ford assembly plants are located there. Automotive parts and accessories, such as radiators, shock absorbers, and windshield wipers, comprise a thriving Buffalo industry.

Aviation, too, makes Buffalo an important manufacturing center for transportation equipment. Curtiss Aeroplane & Motor Corp. began operations in a gigantic new plant in Buffalo in 1929, and from that time on Buffalo has ranged second only to New York as a maker of aviation products.

A fine municipal airport adds to the atmosphere of wings around Buffalo.

Buffalo capitalists—and in that city there are a number of well-heeled gentlemen with the will to invest—foresee a chance to make Buffalo the Detroit of aviation and are quietly working toward that end.

So Buffalo is not only a city where railways meet boats, but where land and air transport vehicles come into being. Perhaps we shall call it the Transportation City. Even though it is America's leading flour milling city. (Bet we fooled you there—thought Minneapolis was, didn't you?)

Other interesting big plants in Buffalo are the Du Pont Rayon Co. factory, where cellophane and rayon roll out in great quantities, the Buffalo plant of the Bethlehem Steel Co., and the American plant of the Dunlap Tire & Rubber Co.

A new four-and-a-half million dollar Peace Bridge now connects Buffalo with Canada at Ft. Erie, Ontario, thus providing the city with still another means of capitalizing upon its remarkable assemblage of transportation facilities.

We indicated a few paragraphs back that Buffalo had grown 60-fold since its original 10,000. If we were to include the Buffalo metropolitan area in our reckoning, the population figure would be nearer 800,000.

And Buffalo is a metropolis. Its residential area extends into Canada. Its industrial section sprawls out into Lackawanna, River Road, and Lancaster-Depew. (On River Road are the mighty blast furnaces of the Tona-wanda Iron Corp.)

Interestingly enough, a large proportion of this area's population, an industrialized people, is native white. A flock of Poles work there, many Canadians of course, and some Italians and Germans. But for the most part American stock (whatever that is) dominates the scene.

That Buffalo is an exceptionally American industrial city is further evidenced by the missionary fervor with which the townsfolk insist on educating and "Americanizing" the foreign-born and second-generation immigrant families.

Adult education got its first big hand in Buffalo, where it still rates as a civic activity on a par with sanitation and the keeping of the peace.

For amusement there are small parks, the inevitable zoo, the equally inevitable talkies, a couple of fair golf courses and several easy ones, a race track over in Canada, an International League baseball team, a few fourth-rate dance places, and one dandy theater (the Erlanger) which occasionally catches a good road show. For summer motoring we recommend a drive around the riverside highways of Grand Island (must ferry across).

Buffalo is, of course, just a whoop-and-a-holler from Canada; and to an unbelievably large number of Americans the opportunity to cross over into Canada is a temptation which simply can't be resisted. (Offstage sigh: "Well, it takes all kinds of people to make a world.")

If you must do it, the way to get over into Canada is via the Peace Bridge, which can accommodate a heavier flow of vehicular and foot traffic than it is called upon to bear oftener than once in the proverbial blue moon. When you get there you'll find Ft. Erie—and we hope you're satisfied.

(To Be Continued in Next Issue)

ADVERTISING AND SALES PROMOTION

'REASON-WHY' COPY DISCUSSED BY DAILY

By George F. Taubeneck

DETROIT—"Reason-why" copy is gaining steadily in favor among advertisers, Walter Daily, manager of the General Electric refrigeration department's sales promotion division, told the Detroit Adcraft Club at its noon luncheon Friday, Jan. 13.

As the featured attraction of the Adcraft's regular monthly program, Mr. Daily made Friday the 13th a lucky day for the scores of Detroit advertising men who thronged the Statler hotel ballroom to hear him. He put on a real show, including the projection of a G. E. talking movie.

Backing up his assertion that national advertisers are learning how "reason-why" copy gets better results in these days than "institutional" and other less direct types of advertising, Mr. Daily exhibited a presentation of typical magazine advertisements of yesteryear alongside present-day magazine advertisements of the same companies, showing the trend toward more direct selling copy.

The presentation had been prepared by Maxon, Inc., Detroit advertising agency which has the G. E. refrigeration and all-electric kitchen accounts.

Beauty is no longer so important in direct-mail advertising, Mr. Daily asserted. Today the idea is the all-important part of a direct-mail piece; and so long as the reasoning is effective, the style and format of the mailing piece matter little.

Mr. Daily also emphasized the increasing importance of proper selection of media. Faced with the necessity of working on limited budgets, advertising managers must now use fewer media, and select each with greater care than ever before.

Both publications and advertising agencies, Mr. Daily observed, are poor advertisers.

"Scarcely anybody whose livelihood depends on advertising does a good advertising job for himself," Mr. Daily declared.

"Advertising agencies which become sales promotion minded the most quickly will be the agencies which get the most business in the future."

During his talk Mr. Daily ran off a talkie film, "Refrigerania Declares War Against Sales Resistance," which had been prepared for use during the G. E. Monitor Top War Campaign last spring.

This film included newsreel cuttings of World War scenes, Lindbergh's welcome in New York City upon his return from Paris, animated cartoons, artillery shells which burst into magazine advertisements, "big bertha" projectiles which exploded into billboard advertisements, machine guns which spattered direct mail pieces, and numerous strange interludes of impassioned speeches by Art Dunning, G. E. distributor in Duluth and past president of Refrigerania.

Mr. Daily also read a poem, "Pioneers," composed by Ben Allen, southeastern district representative of the G. E. refrigeration department.

"We were all great users of advertising a few years ago when business was good," Mr. Daily reminded the assemblage. "But as soon as business dropped off, we cut our advertising budgets or ceased advertising altogether."

"Yet today advertisers can get far more for their money than ever before. Because of the reduction in the number of advertisers and advertisements there is less competition for the reader's attention."

"Money spent today in advertising will be repaid many times over if backed by strong selling effort," Mr. Daily concluded.

GIBSON CAMPAIGN WILL STRESS BABY'S HEALTH

GREENVILLE, Mich.—Gibson Electric Refrigerator Corp. recently inaugurated a campaign through its distributors and dealers whereby it receives regularly from each town the names and addresses of parents of babies.

Direct mailings of Gibson literature on the necessity of pure food for children, and a steel engraving of the Gibson baby, suitable for framing, are then sent to the parents.

The engraving of the Gibson baby is the one that was used last year in connection with national magazine advertising. The baby is really a member of the Gibson organization by virtue of the fact that its father, Earl Wareham of Grand Rapids, Mich., is the artist in the Allen W. Church advertising agency which handles all Gibson advertising.

Campaign Features Len-a-Dor

DETROIT—The Len-A-Dor as a saver of kitchen mileage is to be the theme of the advertising of the Leonard Refrigerator Co. in the newspapers and national magazines in 1933, according to A. M. Taylor, merchandising director.

"The main purpose of this national advertising is to strengthen the association of Leonard and the Len-A-Dor in the minds of the public," explains Mr. Taylor.

By means of dramatic headlines and photographs, the company's national advertising will set forth the Len-A-Dor as a means toward cutting the "kitchen marathon" in half.

PROFESSOR OUTLINES SELLING PRINCIPLES

DETROIT—Six most important principles comprising a formula of sales strategy, as prepared by Prof. Richard Borden and Prof. Alvin C. Busse of New York University, are presented to Kelvinator salesmen in the current issue of "Sales Slants," Kelvinator Sales Corp.'s sales instruction publication.

Principle No. 1, says the booklet, is this:

"During the course of a selling interview, don't do more than your share of the talking. If you have an ordinary enthusiasm, and an ordinary gift of gab, it's an irresistible temptation to take up 90 per cent of the time available with your own comments."

Prof. Borden's comment on the first principle is quoted as being: "If you're a good listener, you convince this prospect in the most direct way possible that you're honest, and that you're trying to render what you think is an intelligent service."

"You will also get your prospect to trot out his most dangerous objections to your offer . . . The most dangerous

objection is a . . . foolish objection in the back of the prospect's mind. It's there and it seems sensible to him, because he's never tried to put it into words."

"Only give him a chance to put that objection into words, and frequently, you won't have to worry about giving him an answer, because the objection crumbles in the process of verbal expression. You have everything to gain and nothing to lose by letting your prospect do his full share of the talking."

Second principle is: "During the course of an interview, don't interrupt your prospect." And the comment of "Sales Slants" on this is, "You probably do it very tactfully; and you do it with the very best of intentions. But according to the professors' statistics, your interruptions hurt."

Here is the third principle: "During the course of an interview, don't unconsciously slip into an argumentative attitude, one that is over-positive."

Prof. Borden is quoted as saying, "Given the right provocation, it is easy to become a shade too self-forgetful; it is easy to slip unconsciously into an argumentative manner. You have to be on your guard to prevent the argumentative manner."

Next of the professor's rules given

by the Kelvinator booklet is as follows: "During the opening phase of a sales talk, inquire before you attack. When your prospect opens with an objection, don't start by immediately telling him he's all wrong. Ask him if he has another objection."

Prof. Borden explains the fourth principle by saying, "During the last and decisive half of the interview, the prospect automatically does most of the listening. And he does it with at least something of the same spirit of reasonableness you used in listening to him."

"If you inquire before you attack, you'll also know where to drive your story home. Your prospect has not merely uncovered his objections, but he has specified which he considers important and which trivial."

Principle No. 5 is intended for application with the preceding one. It is this: "When your prospect explains an objection of his for the first time, repeat it briefly in your own words. If you don't, your prospect will never be content that you understand it."

The sixth rule in the formula is as follows: "As an interview draws to a close, the average prospect usually hits on one thing. Be on the alert to discover it. Stick to it during the close. Don't digress and don't allow your prospect to digress."

WATCH SPARTON

Something **BIG** is coming **YOUR** way

Get ready! Get set! It's coming! The new 1933 Sparton refrigerator. Sparton has created an opportunity for refrigerator dealers. Sparton has produced a new line of refrigerators which you can **SELL** and which will bring you in **PROFITS**. What Sparton is about to announce will have great appeal for every housewife in this country. The new Sparton will offer the things every housewife wants and needs in the refrigerator she purchases. We can't tell you any more about this sensational refrigerator now. . . We do say—**WAIT**. It will be worth your while. We do say, **write immediately** for confidential information about this amazing new Sparton achievement. **Do it now**. The Sparks-Withington Company, Jackson, Mich. Sparton of Canada, Limited, London, Ont.

SERVICE

CROSELY ENGINEERS DESIGN TEST BENCH

CINCINNATI—Crosley refrigerating engineers have just designed a new portable test bench upon which a Crosley condensing unit can be mounted and numerous performance tests made by manipulation of the test equipment. The bench is available to distributors, according to Neil Bauer, sales division manager of Crosley Radio Corp.

The picture shown at left shows the bench with a unit in place. The bench is equipped with a high-pressure gauge and a low-pressure vacuum gauge, so that a service man can make connections to the high and low sides of a refrigerator and easily diagnose its condition, Crosley engineers explain.

The test bench is also provided with a recording thermometer, mounted on the back panel next to the high-pressure gauge, enabling temperature records to be made on a unit. Prime purpose of the recording thermometer is to regulate the temperature control of the refrigerator, but also to show its cycling characteristics.

The jar shown on the lower tray is for lye water, Crosley men state. A small charge of refrigerant may be released through the copper tubing that runs from the unit to the lye water, the lye solution absorbing the sulphur dioxide gas.

Strapped to the bottom shelf of the test bench is a 5-lb. tank, fitted with a special non-leaking valve, which is to be used as a service drum. It may be filled from the larger reserve tank of the refrigerant which distributors maintain.

Another feature of the test bench is its provision for discharging an entire unit into an empty cylinder. This is done by attaching an empty refrigerant container to the third copper tube which extends to the extreme bottom of the cabinet (shown in the above picture as a loop between the sulphur dioxide tank and the lye water container).

A second recording thermometer appears in the above picture next to the evaporator in the compartment. This is not considered absolutely necessary, hence Crosley designers have not included it as a standard part of the test bench.

The test benches are built in the Crosley factory, and shipped on order to distributors. Charts are supplied with the bench to show proper operating pressures for both high and low sides, proper cut-in and cut-out points, box temperatures, and other details.

Portable Ammeter Provided with Special Plugs

By Samuel C. Clark
Bureau of Home Economics, Department of Agriculture, Washington, D. C.

For some time a portable recording ammeter for alternating current has been used in the household refrigerator testing laboratory of the bureau of home economics, U. S. Department of Agriculture.

The daily chart was actuated by a spring-driven clock, which recently has been replaced by an electric clock. Binding posts had been factory-installed within the wooden carrying case both for the ammeter circuit and for the clock circuit.

Two independent sets of leads therefore emerged through holes in the case and, in order to move the instrument conveniently from job to job, it was customary to open the case to release these leads. Otherwise, they tended to dangle along behind the recorder. In addition an arrangement for placing the ammeter in series in the measured circuit had to be provided and trundled.

A survey of the interior of the carrying case seemed to reveal sufficient space for fitting permanent attachment plugs to the case itself. Accordingly one plug with flush receptacle for cap, with standard contact blades and with a plate 2 1/4 inches in diameter with beveled edges, was inserted in a hole bored in one side of the case opposite the ammeter binding posts.

A motor plug with one wide and one narrow blade was also installed. This non-standard or polarized arrangement of blades tends to prevent interchange of leads. Two receptacles for fuses were installed in parallel inside the case between the attachment plugs.

Current from the source is brought first to the polarized motor plug. The hot wire runs to each fuse. From one fuse, current goes to the electric clock and from the other fuse, to an ammeter binding post. The second ammeter binding post is connected to the flush receptacle. The return from this receptacle, together with the return from the telechron clock, is hooked to the motor plug.

To operate the recording ammeter with this improved hook-up requires merely the insertion in the polarized plug of the special lead from the source and that from the circuit under measurement in the ammeter receptacle. To move the instrument to another job requires only that two leads

be disconnected and that one special cord be carried with the recorder.

This wiring scheme is applicable, in whole or in part, not only to one specific instrument but also to any similar hook-up in which the accuracy of results desired is not precluded by electrical contacts made by attachment plugs and caps.

For example, in the bureau, the wiring diagram described by Paine* for a 5-ampere watt-hour meter for student laboratory work has been modified by the replacement of the entrance-porcelain, cleat-base receptacle by a motor plug with one wide and one narrow blade. This replacement obviates the use of an electric cord with caps at each end and the possibility of exposed live contact blades.

Since the flush receptacle may be arranged for non-standard blades in a manner different from that of the source motor plug employed, even wider use of the idea here described

Exterior of Meter



Showing special receptacles

is indicated. The series circuit for the ammeter is permanent and the carrying case presents a neat appearance, free from incumbrances. The leads cannot be interchanged.

Independent circuits, which may be protected by proper fuses, are provided for clock and measured circuit. Operation is simplified and portability increased.

*Paine, F. D.—Some laboratory installations now used for the study of electrical household equipment, pages 10-12, National Electric Light Association, New York City, 1929.

26 BRANCHES HANDLE SERVICE ON MOTORS

DETROIT—United Motors Service, national organization supplying field service to Delco motors used in refrigeration, has branches in 26 of the largest cities in the United States and Canada.

These branches service motors for refrigerator factory branches, distributors, dealers, and independent service companies.

Servicing of Delco motors is of two types—warranty and maintenance, according to T. W. Richman, manager of the commercial motors department of the national organization.

Repair All Makes

The company does not confine itself to servicing Delco motors only, but is equipped to repair all makes.

Only genuine parts are used in repairing all motors. Each United Motors Service branch carries a complete stock of Delco motor parts, and of those parts for other motors which are most often required, according to Mr. Richman.

At no time is a part other than one furnished by the manufacturer used in servicing a motor. If the service branch does not have in stock the part needed, the latter is purchased from the factory of the motor being repaired.

Equipment of Similar Type

Equipment in all United Motors Service branches is of similar type, and each branch follows the same standards of repair, and test specifications, as set up by the motor factory.

When a motor is brought to any branch for repair, says Mr. Richman, it is first disassembled, and all parts are washed in gasoline. Then all parts are examined for imperfections, wear, breakage, and all those not found to be in proper condition are discarded.

Each part discarded is then replaced by a new one, as the parts bearing the disassembled unit pass by a parts inspector. All parts are then assembled, and the motor placed in a "quiet room" where it is tested for quietness of operation, grounds, shorts, etc.

Before the motor receives its final O.K., it passes through a dynamometer load test, where it is tested for cut-in and cut-out torques, full load watt input, and locked rotor torque.

After its final test, the serviced motor is sprayed with a satin duco finish.

Those refrigerator manufacturers using Delco motors in their household units, and to whose distributors, deal-

ers, and factory branches United Motors Service is the official motor service organization, are as follows:

Copeland Products, Inc.; Crosley Radio Corp.; Frigidaire Corp.; Gibson Electric Refrigerator Corp.; Kellogg Mfg. Co.; Kelvinator Corp.; Illinois Moulding Co.; Leonard Refrigerator Co.; Norge Corp.; Trupar Mfg. Co.; Sanitary Refrigeration Co.; Sparks-Withington Co.; Starr Co.; Uniflow Mfg. Co.; and U. S. Radio & Television Corp.

Besides the general offices of the service organization and their service station located in Detroit, branches of United Motors Service are located in the following cities:

Atlanta, Boston, Chicago, Los Angeles, Minneapolis, New York City, San Francisco, Seattle, Kansas City, Dallas, Cleveland, Denver, Indianapolis, Buffalo, Philadelphia, St. Louis, New Orleans, Pittsburgh, Omaha, Memphis, Cincinnati, Milwaukee, Des Moines, and Toronto, Canada.

LOCATION OF LIQUID LINE MAY CAUSE TROUBLE

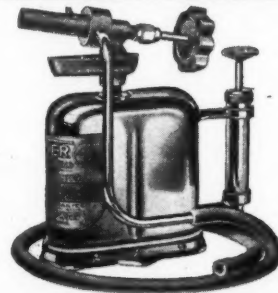
LOS ANGELES—Improper location of the liquid line on a refrigerating unit is a possible source of trouble, according to *The Liquid Line* of Refrigeration Service, Inc., of this city.

"An accident was recently averted by good fortune and an exceptionally weak motor. On a certain apartment house unit, a piece of belt came off and wrapped itself around the liquid line which passed across the unit very close to the flywheel.

"Lady luck was with that particular installation for the liquid line flare stood the strain and the motor stalled, blowing the fuses."

TURNER BRASS USES BLOW TORCH AS GAS DETECTOR

SYCAMORE, Ill.—Turner Brass Works' halide detector is essentially an alcohol-burning blowtorch, with a specially designed burner housing which syphons its air supply through a flexible rubber detecting tube, according to engineers of the company.



Its principal application in refrigeration is for finding leaks of chlorinated hydrocarbon refrigerants.

The device is placed near the refrigeration equipment to be tested, so that the end of the air syphoning tube will reach all joints and connections. Then if the tube opening is held in proximity to a leaking joint, gas is syphoned through to the burner, causing the flame to change in color from a light blue to a bright green.

In addition, the detector can be used as a blowtorch for general service work such as soldering, heating coils to expel gases, etc.

BINDER FORMS SERVICE FIRM IN NEWARK

NEWARK—T. W. Binder, former vice president in charge of sales and engineering for the Binder Distributing Co., Copeland distributor here, has organized the T. W. Binder Co. as an independent service company.

Mr. Binder's plan is to handle all service and installation for two or three local distributors. He has already contracted for the Copeland work in Newark. Charges will be made either on a "per call" basis or with a flat yearly rate for service. Installations are made for a flat contract price, Mr. Binder states.

RENE, LAY ORGANIZE NEW SERVICE COMPANY

WEBSTER GROVE, Mo.—Walter Rene and John Lay, both graduates of the Utilities Engineering Institute, have just organized the Webster Refrigerating Service Co. here to service and install both household and commercial refrigerators.

They plan to maintain 24-hour service facilities, and are going to give a 30-day guarantee on service work. By membership in several local lodges, and in the Farmers' Neighborhood Association of St. Louis county, they are making contacts for service work.

DETROIT CREAMERIES MAKES SINZ SERVICE MANAGER

DETROIT—Fred Sinz has been appointed service manager of the Detroit Creameries Co. here, directing service on ice cream cabinets operated in this area by Detroit Creameries and Arctic Dairy Products Co.

BOOKS

"REWINDING SMALL MOTORS"
Authors: D. H. Braymer and A. C. Roe. Publisher: McGraw-Hill Book Co., 330 W. 42nd St., New York City. Pages: 256. Price: \$2.50. Date of Publication: 1932.

THIS new book, a second edition of one published in 1925 under the same name, brings up-to-date the first work with treatment of new developments (chiefly the capacitor motor) which have taken place in the small motor industry since 1925.

It is a practical handbook for practical workers on rewinding small motors for refrigerators, oil burners, washing machines, etc. The book also goes into the somewhat larger motors for equipment in retail stores, garages, markets, and ice cream stores, and touches on multi-speed, single-phase motors for unit heaters and comfort coolers.

Various winding jobs are described step by step in language for the shop man, and some of the operations are illustrated. Chapters are written on testing and connecting, so the worker gets the complete picture of a rewinding job.

Repair shop tools are rather thoroughly described, and explanations given for their use. A completely new section of the book is an appendix giving operating characteristics and constructional details of single- and two-phase capacitor motors.

Additional Sheets for "OFFICIAL REFRIGERATION SERVICE MANUAL"

Publisher: Gernsback Publications, Inc., 96 Park Place, New York City. Author: L. K. Wright. Number of additional pages: 96. Price: \$1.00.

PUBLISHERS of this loose-leaf compilation of service information have added considerably to the usefulness of the first edition by offering the new sheets which fit in at various places in the book.

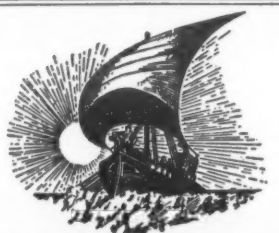
The new sheets represent an answer to the criticism made when the first edition came out, namely, that information was incomplete in some instances, and that a number of important makes of machines were overlooked. The chief service of the additional sheets is that of providing further data on machines which are covered in the original book.

An entirely new section entitled "Service Kinks" consists of 15 pages of practical suggestions for servicing any make of refrigerator. This section resembles the "Service Hints" written by Frank W. Gray for *ELECTRIC REFRIGERATION NEWS*.

This manual is now a handy reference book for independent service men who frequently encounter various makes of obsolete machines, and with further modernization by issuance of data on more present-day refrigerators should be useful to a greater number of service men.

Service Company Uses Telephone Directory Advertisement

PHILADELPHIA—General Refrigeration Sales and Service Co., local independent service company, uses the classified section of the telephone di-



REFRIGERATION SERVICE ON ALL MAKES AND TYPES OF Domestic and Commercial Equipment

Contracting in Domestic and Commercial Installations

AUTHORIZED SERVICE
SERVEL - M & E - WELSBACH

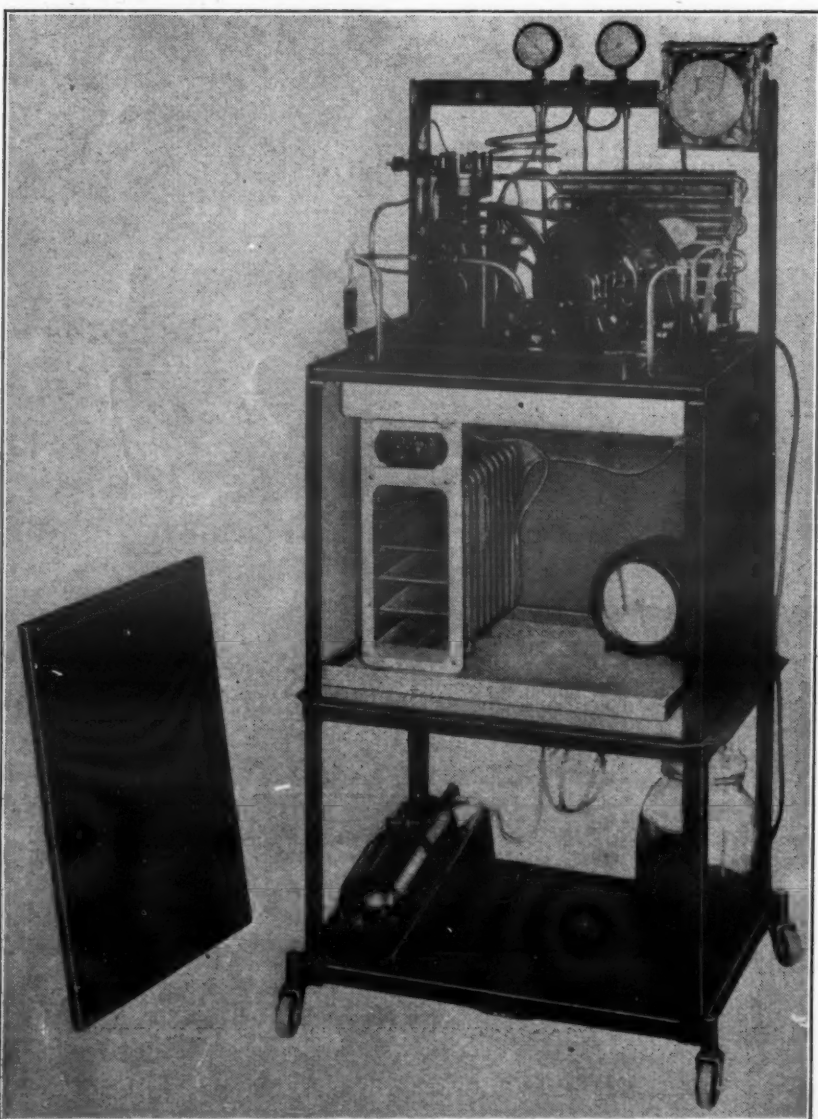
| | | |
|------------|--------------|------------|
| Frigidaire | Kingsford | Iceberg |
| Kelvinator | Coldac | Abesque |
| Copeland | Irigoien | Electric |
| Champion | Holmes | Jewel |
| Socid | Zerone | Buckeye |
| Allison | Belding Hall | Sharpless |
| Dayton | Universal | and others |

Consulting Engineers—Air Conditioning

GENERAL REFRIGERATION
SALES & SERVICE CO.

N. E. Cor. 21st and Washington Ave.
DAY—HOWARD 8200—NIGHT
Allentown Branch—130 So. 7th St.

New Crosley Test Bench



To help distributors test refrigerating systems, Crosley engineers devised this special bench for making performance tests (see explanation above).

500 Sampson Dealers Attend Model Norge Sales Convention

(Concluded from Page 1, Column 1)
Norge, presented a detailed study of the changes in construction of the Norge Rollator compressor. His talk was illustrated by a slidefilm. Dealers paid close attention for almost an hour while Major Blood went through his engineering discussion of the product.

Advertising Plans

Harry Terry, account executive of the Cramer-Krasselt advertising agency, showed the dealers what Norge advertising will look like in 1933.

Study of a recent Gallup survey, returns from the Norge crossword puzzle contest, and results of a special survey made for Cramer-Krasselt by representatives of 160 different newspapers (each of whom interviewed 10 householders) comprised the foundation for the 1933 Norge advertising program, according to Mr. Terry.

Women, these surveys disclosed, like to see pictures of products in use; hence most Norge advertisements this year will carry illustrations of women using a Norge for various purposes in a home.

Saturday Evening Post, Good Housekeeping, and Better Homes & Gardens will carry the Norge message to a national public this year. Newspaper advertising will be placed in 366 key cities.

Selection of Media

Cramer-Krasselt decides how worthy a paper is on the following basis, Mr. Terry revealed:

1. Editorial content—why people buy it.
2. Circulation—where the paper goes, what kind of readers it has, how it got them.
3. Cost—milline rate.

When selecting a particular newspaper, Cramer-Krasselt men check up to see if department stores use it regularly, how heavy the classified advertising section is, what reader acceptance and preference can be proved, what cooperation can be obtained, how it fits the proposition, whether or not it carries other refrigeration advertising, and its merchandising value (how well known to dealers and distributors).

One salient Norge copy theme this year will be: "Who Says You Can't Please Everybody?"

Sales Promotion Program

James A. Sterling, sales promotion manager, offered a short, lively introduction to the sales promotion program.

This year Norge sales promotion items number 17, instead of 68, he pointed out. Of these, three mailing pieces are all a dealer really needs to do an effective direct mail job.

Window displays for coming months have already been tested in the Detroit Good Housekeeping Shop, where they were seen by 5,000 persons—who, in turn, were observed by checkers. Three of the displays tested, according to Mr. Sterling, stopped 20 per cent of all passersby.

Similarly tested are this year's billboard posters, which will be furnished practically without cost (save for the dealer's imprint). A free mat service has also been instituted for dealers.

Contests for salesmen in 1933 will be conducted on a point basis, so that every salesman can win a prize.

"We want to give something to every hard-working salesman, instead of some big prize to a big shot," declared Mr. Sterling.

Merchandising Counselor Talks

Charley Lowe, new Norge merchandising counselor, was next on the program. His talk on display was much the same as that he gave before the distributors at Muskegon, and is covered in Elston D. Herron's report on page 1, columns 4 and 5 of this issue.

Not until John Knapp came to bat did the dealers see the 1933 Norge line. Highly dramatic was Mr. Knapp's unveiling (or rather, uncurtaining) of the stylish new Norge models. He discussed each model in turn, comparing it with previous models of similar sizes, and pointing out refinements and new features.

Mr. Knapp suggested that all dealers quote delivered, freight, and tax paid, prices to customers. The key to increased sales this year, he averred, will be conscientious use of the new salesmen's training course.

Speakers at the banquet in the evening included Mr. Sampson, Major Blood, Mr. Knapp, George Borg, president of Borg-Warner, and George F. Taubeneck, editor of ELECTRIC REFRIGERATION NEWS.

Entertainment on Program

During the meal three strolling Italian minstrels sang pleasant and melodious songs. Quin Ryan, director of radio station WGN, pioneer radio sports announcer, and good friend of Mr. Sampson, broadcast an imaginary sporting event (race between a flivver and a railroad train to a grade crossing) to the great amusement of the guests.

A fast-moving vaudeville show, which included everything from three

fancy skaters to a hot-from-Harlan colored revue, concluded the evening's entertainment. Most applauded performer was a 165-pound blonde Juno from Muskegon, whose lithe acrobatic dancing stopped the show.

Newsboys interrupted the show to bring in extra editions of the *Chicago Tribune*, front page of which was entirely devoted to the Sampson meeting.

Schedule of Meetings

Dates and places of coming Norge distributor-dealer meetings are listed below. In parentheses after the name of each city are the names of the Norge officials who will have charge of the meeting.

Jan. 24—Cleveland (Knapp, Densmore, Low, Terry, Oliphant, Blood); Buffalo (Sterling, O'Harra, Stedman, Tenney). Jan. 25—Indianapolis (Knapp, Densmore, Low, Terry, Oliphant, Blood); Rochester, N. Y. (Sterling, O'Harra, Stedman, Tenney). Jan. 26—St. Louis (Knapp, Densmore, Low, Seiler, Rowles, Blood); Syracuse, N. Y. (Sterling, O'Harra, Stedman, Tenney). Jan. 27—Kansas City, Mo. (Knapp, Densmore, Low, Seiler, Rowles).

Jan. 30—Dallas, Tex. (Knapp, Densmore, Seiler, Rowles); Cincinnati (Sterling, Low, Hanson, Oliphant, Blood). Jan. 31—San Antonio, Tex. (Knapp, Densmore, Seiler, Rowles); Louisville (Sterling, Low, Hanson, Oliphant). Feb. 1—Houston, Tex. (Knapp, Densmore, Seiler, Rowles); Nashville, Tenn. (Sterling, Low, Hanson, O'Harra, Hallock). Feb. 2—Memphis, Tenn. (Sterling, Low, Hanson, O'Harra, Hallock). Feb. 3—New Orleans (Knapp, O'Harra, Seiler, Hallock); Little Rock, Ark. (Sterling, Low, Densmore, Hanson, Rowles).

Visit Southern Cities

Feb. 6—Birmingham, Ala. (Knapp, O'Harra, Seiler, Hallock); Oklahoma City (Sterling, Low, Densmore, Hanson, Rowles). Feb. 7—Atlanta (Knapp, O'Harra, Seiler, Hallock). Feb. 8—Jacksonville, Fla. (Knapp, O'Harra, Seiler, Hallock). Feb. 9—Tampa, Fla. (Knapp, O'Harra, Seiler, Hallock); El Paso, Tex. (Sterling, Densmore). Feb. 10—Miami, Fla. (Knapp, O'Harra, Seiler, Hallock); Phoenix, Ariz. (Sterling, Densmore, Pizarro).

Feb. 13—Richmond, Va. (Knapp, O'Harra, Low, Seiler, Blocher); Los Angeles (Sterling, Densmore, Terry, Pizarro). Feb. 14—Washington, D. C. (Knapp, O'Harra, Low, Seiler, Blocher, Blood). Feb. 15—Baltimore (Knapp, O'Harra, Low, Seiler, Blocher, Blood); San Francisco (Sterling, Densmore, Terry, Pizarro, Delzeith). Feb. 16—Philadelphia (Knapp, O'Harra, Low, Seiler, Blocher, Blood). Feb. 17—Philadelphia (Knapp, O'Harra, Low, Seiler); Portland, Ore. (Sterling, Densmore, Terry, Pizarro, Delzeith).

Feb. 20—Boston (Knapp, O'Harra, Low, Seiler); Seattle (Sterling, Densmore, Terry, Pizarro, Delzeith). Feb. 21—Providence, R. I. (Knapp, O'Harra, Low, Seiler); Spokane, Wash. (Sterling, Densmore, Terry, Pizarro, Delzeith). Feb. 22—Butte, Mont. (Sterling, Densmore, Terry, Pizarro, Delzeith). Feb. 23—Springfield, Mass. (Knapp, O'Harra, Low, Seiler, Tenney); Salt Lake City, Utah (Sterling, Densmore, Terry, Pizarro, Delzeith). Feb. 24—Albany, N. Y. (Knapp, O'Harra, Low, Seiler, Tenney); Denver (Sterling, Densmore, Brehm, Pizarro).

Feb. 27—Charleston, S. C. (Knapp, Hanson, Oliphant); Hasting, Neb. (Sterling, Densmore, Brehm, Low). Feb. 28—New York City (Knapp, Seiler, O'Harra); Omaha (Sterling, Low, Densmore, Brehm). March 1—Waterloo, Iowa (Sterling, Low, Densmore, Brehm). March 2—Minneapolis (Sterling, Low, Densmore, Terry, Blood). March 3—Milwaukee (Sterling, Low, Densmore, Terry, Blood).

Detroit Engineers Will Discuss Standards

DETROIT—Members of Detroit's section of the American Society of Refrigerating Engineers will hear discussions of "Domestic and Commercial Refrigeration Standards" when the group holds its monthly meeting at 7:30 p. m., Monday night, Jan. 30 in the English grill of the Book-Cadillac hotel. It will be an open meeting.

Four speakers will address the society. Howard G. Chamberlin, research engineer of Copeland Products, Inc., will discuss "Performance Standards of the Domestic Refrigerator." A. E. Knapp, Kelvinator commercial engineer, will speak on "Standards of Commercial Applications."

"Standards of Measurement of Condensing Units" will be the subject of J. L. Gibson, commercial engineer for Frigidaire Corp. in Dayton, and William Higham, Universal Cooler commercial engineer, will speak on "Capacity Standards for Commercial Cooling Units." John Wyllie, Kelvinator commercial sales engineer, will be in charge of the meeting.

ENGINEER DESCRIBES HOOVER DAM WORK

(Concluded from Page 1, Column 2)
Six Companies, Inc., builder of the dam.

Included in the speaker's description of the construction thus far completed, were the following facts:

The construction of Hoover Dam was the largest contract ever let by the government—nearly \$49,000,000—and was awarded to Six Companies, Inc., a corporation composed of six Pacific Coast contractors.

The dam, when completed, will be 730 ft. high, 650 ft. thick at the base tapering to 45 ft. at the top and the length at top will be 1,180 ft. Approximately 3,500,000 yards of concrete will be used.

The dam will accomplish four primary objects. The first of these is flood control. In 1904 the Colorado river overflowed its banks and emptied into the Salton Sea. This trouble was not corrected until 1907. By that time the sea had risen 73 ft. and \$2,000,000 had been spent in corrective measures.

The second object is regulation of irrigation flow. The flow of the river fluctuates between such extreme limits that the minimum volume is often not sufficient for Imperial Valley irrigation purposes. The basin created by the dam will extend upstream 115 miles, and will be about 8 miles across at the widest point. The total capacity will become 30,500,000 acre feet, large enough to hold two year's flow of the Colorado river.

The third object is the storage of silt. Someone has said that the Colorado is too thick to drink and too thin to plow. Sixty-two per cent of the river's volume is silt, the average yearly discharge of silt being equal to all the earth removed in digging the Panama Canal. Approximately 100,000 acre feet of mud will be deposited in the reservoir each year, which will

leave about 75 per cent of the basin's capacity available for water storage at the end of 50 years. It is estimated that in 222 years the reservoir will fill up but it is also believed that the slowing up of the river upstream will cause silt to deposit at that point, Mr. Walters stated.

The fourth important object is the generation of power. Six hundred and sixty thousand hp. will be developed and sold at 1.63 mills per kwh. A certain amount of seasonal current will also be available at 0.5 mills per kwh. The power contracts signed with various municipalities and utilities will bring an income at the end of 50 years of \$373,500,000.

The most expensive part of the construction is the building of the four diversion tunnels, two on each side of the river. Each one will be about 4,000 ft. long and 50 ft. in diameter. Their cost will be over \$13,000,000.

The concrete in the dam will be poured by the checker board plan 50x50x5 ft. So great is the size and thickness of these slabs that the heat generated in setting would require 200 years to be dissipated by natural methods. Specifications call for the removal of all heat above 72° F. by circulation of cold water after setting six days.

The amount of refrigeration necessary has been computed at over 600 tons. This problem has not been finally worked out as yet, but the latest information is that approximately 800,000 ft. or 150 miles of 2-in. pipe will be set in the concrete through which cooling water will be circulated.

With a rise from 40° to 47° F., 2,100 gallons per minute will be needed. River water will be used during the winter but when the weather and the water become warm it is planned to use refrigerating machines with a capacity of 700 tons.

The motion pictures were shown at the conclusion of the talk. They included one reel of views around Boulder City and three reels showing the construction of the dam up to June, 1932.

DEALERS WIN PRIZES IN BUREAU CONTEST

(Concluded from Page 1, Column 2)
than 100 sq. ft.—\$100 to E. O. Cone Co., El Paso, Tex. First honorable mention, H. G. Bogart, Hillsdale, Mich.; second honorable mention, Lehigh Valley Supply Co., Allentown, Pa.; third honorable mention, George Belsey, Los Angeles.

For the best central station window of 100 sq. ft. or less—\$100 to Philadelphia Electric Co., Philadelphia. First honorable mention, Buffalo, Niagara & Eastern Power Corp., Buffalo; second honorable mention, The Edison Electric Illuminating Co. of Boston; third honorable mention, Niagara Lockport & Ontario Power Co., Olean, N. Y.

For the best central station window of more than 100 sq. ft.—\$100 to Minnesota Power & Light Co., Duluth, Minn. First honorable mention, Illinois Power & Light Co., Galesburg, Ill.; second honorable mention, New York Power & Light Corp., Albany, N. Y.; third honorable mention, St. Joseph, Mo., Light, Heat & Power Co.

For the best dealer store interior display—\$100 to Maltzahn's, Cincinnati. First honorable mention, T. S. Goslin Lumber Co., Wildwood-by-the-Sea, N. J.; second honorable mention, National Electrical Supply Co., Washington, D. C.; third honorable mention, Powers Furniture Co., Portland, Ore.

For the best central station interior display—\$100 to Fitchburg Gas & Electric Co., Fitchburg, Mass. First honorable mention, The Narragansett Electric Co., Providence, R. I.; second honorable mention, Consumers Power Co., Flint, Mich.; third honorable mention, Utah Power & Light Co., Salt Lake City, Utah.

Judges of the contest were F. L. Wertz, display counsel, New York City; J. E. North, president of the Electrical League of Cleveland; and E. R. Meserve of Wanamaker, New York.



WHAT DOES SHE WANT in her Electric Refrigerator?

ALL the outstanding features of refrigeration are combined in a Gibson. It has everything a woman wants.

A fast moving, profitable line with sales features galore. New models, new beauty, new improvements. Priced to meet the keenest competition. Stock the Gibson line for 1933 and join the parade of happy dealers.

GIBSON ELECTRIC REFRIGERATOR
GREENVILLE CORPORATION MICHIGAN

AS LOW AS
\$112.00

F.O.B. Factory - TAX PAID



SHE WANTS:

BEAUTY

ECONOMY

HERMETICALLY SEALED UNIT

TWO CYLINDER COMPRESSOR

FOOT PEDAL DOOR OPENER

INTERIOR LIGHT

CONVENIENCE

RECIPES

DEPENDABILITY

GIBSON HAS:

The Most Beautiful Refrigerator in the World

Low Operating Cost

Hermetically Sealed MONUMENT

Two Cylinder Compressor on All Models

PRESTOE-DOR

Recessed Dome Light

Adjustable Shelf (Pat. Pend.)

"Take-Out" shelf, sliding shelf. Cabinet mounted on 13 in. legs. Food compartments raised to knee height. Door lock and keys.

Gibson Life-Time Recipe File

Over 50 Years Experience

DIRECTORY OF INDEPENDENT SERVICE COMPANIES

Beginning on this page is a directory of independent service companies compiled over a period of many months by ELECTRIC REFRIGERATION NEWS with the cooperation of Servel Sales, Inc., Universal Cooler Corp., Brunner Mfg. Co., Refrigeration Service, Inc. (Los Angeles), and others.

Announcement that this list would be published has drawn inquiries and extra copy orders from all parts of the country. (Please turn to page 6 for editorial comment on the significance of the growth of independent service companies.)

The present list is more than three times as large as the last-published directory of independent service companies. Editors of the News will appreciate information about any service firms omitted from this directory, and corrections in names or addresses. Please address ELECTRIC REFRIGERATION NEWS, 550 Maccabees Bldg., Detroit, Mich.

ALABAMA

BIRMINGHAM
Davidson Electric Co.
1931 10th Ave. S., Birmingham, Ala.
Ideal Heating & Refrigerating Co.
929 S. 22nd St., Birmingham, Ala.
Independent Service Co.
713 S. 27th St., Birmingham, Ala.

MONTGOMERY
Reeves Electric & Plumbing Co., Inc.
40½ Commerce St., Montgomery, Ala.
Southern Machinery & Supply Co.
316 Tallapoosa St., Montgomery, Ala.

SHEFFIELD
Muscle Shoals Radio Co., Sheffield, Ala.
Triumph Electric Co., Inc.
212 Montgomery Ave., Sheffield, Ala.

ARIZONA

PHOENIX
Phoenix Refrigeration Service,
803 No. Third St., Phoenix, Ariz.
Worcester, Earl F., 22 Midway, Phoenix

ARKANSAS

FORT SMITH
Neislar, R. W.
2616 North "C" St., Ft. Smith, Ark.
LITTLE ROCK
Beakley, A. B., 1111½ Valmar, Little Rock
Refrigeration Service Co.
2112 W. 19th St., Little Rock, Ark.
PINE BLUFF
Arledge, E. R., P. O. Box No. 6, Pine Bluff

CALIFORNIA

ALHAMBRA
Alhambra Refrigeration Service
26 No. Marengo Ave., Alhambra, Calif.
ALTADENA
Redmond, J. R., 478 E. Palm, Altadena, Calif.
BERKELEY
Kane Electric Co.
2006 Shattuck Ave., Berkeley, Calif.
BEVERLY HILLS
Fosdick, Lewis R.
437 No. Canon Dr., Beverly Hills, Calif.
CABAZON
Desert Refrigeration Co., Cabazon, Calif.
EL CENTRO
Allender Refrigeration Service
El Centro, Calif.
Bratley, Ted
P. O. Box 816, El Centro, Calif.
Parker Ice Machine Service
1243 Main St., El Centro, Calif.
FRESNO
Martin's Refrigeration Service
3250 Clay, Fresno, Calif.
GLENDALE
Frigeration Service Co.
700 Professional Bldg., Glendale, Calif.

Olsen, H., 1063 Thompson St., Glendale, Calif.
LINDSAY
Conklin, Earl W.
Electric Refrigeration Service, Lindsay, Calif.
LONG BEACH
Gould, L. S.
1069 Raymond, Long Beach, Calif.
Refrigeration Service Co.
323 Western Ave., Long Beach, Calif.
Union Refrigeration Sales & Service
2013 E. 10th St., Long Beach, Calif.

LOS ANGELES
Acme Refrigeration Service
1018 Hobart Blvd., Los Angeles, Calif.
Allison, W. W.
2708 W. 75th St., Los Angeles, Calif.
Arcade Refrigeration Service
1681 W. 65th Pl., Los Angeles, Calif.
Artic Refrigeration Service
1716 W. Santa Barbara, Los Angeles, Calif.
Associated Refrigeration Co.
341 So. Western Ave., Los Angeles, Calif.
Associated Refrigeration Service
4695 Hollywood Blvd., Los Angeles, Calif.
Atlas Refrigeration Service
2345 W. Washington, Los Angeles, Calif.
Beckman, Joseph R.
564 No. Plymouth Blvd., Los Angeles, Calif.
California Refrigerating Service
4685 Hollywood Blvd., Los Angeles, Calif.
City Refrigeration Service
4122 Beverly Blvd., Los Angeles, Calif.
Consolidated Refrigeration Service
1229½ So. Mariposa, Los Angeles, Calif.
Co-operative Refrigeration Service
2018 W. 11th St., Los Angeles, Calif.
Crowe, W. P., 1607 N. Cahuenga, Los Angeles
Dependable Refrigeration Service
3525 W. Pico St., Los Angeles, Calif.
Domestic Refrigeration Service
1909 W. Pico St., Los Angeles, Calif.
Economy Refrigeration Service
2229 So. Thurman St., Los Angeles, Calif.
Electro-Kold Service Co.
425½ So. La Brea St., Los Angeles, Calif.
Ellay Refrigeration Service
8678 W. Pico St., Los Angeles, Calif.
Frigeration Service
3939 York Blvd., Los Angeles, Calif.
General Refrigeration Service
1554 So. Western Ave., Los Angeles, Calif.
Golden State Refrigeration Service
2606 W. 54th St., Los Angeles, Calif.
Guaranteed Refrigeration Service
1725 Park Ave., Los Angeles, Calif.
Hollywood Refrigeration Service
722 No. Cahuenga Ave., Los Angeles, Calif.
Independent Refrigeration Co.
2689 W. Pico St., Los Angeles, Calif.
Jack & George Refrigeration Service
743 S. Western Ave., Los Angeles, Calif.
Kemp's Electric Refrigeration Service
7515 Melrose, Los Angeles, Calif.
Knodel, R. H.
1811½ W. 25th St., Los Angeles, Calif.
McConnell, H. E.
1029 No. Alvarado St., Los Angeles, Calif.
Mills, E. L., 912 E. 57th St., Los Angeles
Morris Electric Refrigeration
2711 Knox Ave., Los Angeles, Calif.
National Refrigeration Co.
5132 Santa Monica Blvd., Los Angeles, Calif.
Peerless Refrigeration Service
1042 So. Western Ave., Los Angeles, Calif.
Refrigeration Service, Inc.
3109 Beverly Blvd., Los Angeles, Calif.
Refrigerator Guaranty Service Co.
2300 Beverly Blvd., Los Angeles, Calif.
Remington Refrigeration Service
2304½ So. Union St., Los Angeles, Calif.
Seeburger, O. P.
5123 Maplewood Ave., Los Angeles, Calif.
Southwestern Refrigeration Corp., Ltd.
4683½ Hollywood Blvd., Los Angeles, Calif.
Stevens, W. P.
1634 Long Beach Ave., Los Angeles, Calif.
Stoner Refrigeration Service
159 So. Hayworth, Los Angeles, Calif.
Varden, J. T., 3882 S. Arlington, Los Angeles

OAKLAND
Automatic Refrigeration Service
15-11 Grant, Oakland, Calif.
East Bay Music Supply
3534 E. Fourteenth St., Oakland, Calif.
Magoon's Refrigeration, Ltd.
4145 Broadway, Oakland, Calif.
Refrigeration Specialists
1529 Hopkins St., Oakland, Calif.
Scott Buttner Refrigeration Co.
19 Grand Ave., Oakland, Calif.
Super-Electric Refrigeration
3663 Maple Ave., Oakland, Calif.
OCEAN PARK
Knodel, R. H., 122 Marine St., Ocean Park
ONTARIO
Mack's Refrigeration Service
402 W. California Blvd., Ontario, Calif.
PASADENA
Electric Refrigeration Service
1500 N. El Molino Ave., Pasadena, Calif.
Electric Service
1396 No. Lake St., Pasadena, Calif.
R. W. Service
949 No. Garfield Ave., Pasadena, Calif.
PITTSBURG
Davis, E. R., P. O. Box 893, Pittsburg, Calif.
POMONA
Peck's Refrigeration Service
130 W. Third St., Pomona, Calif.
REDLANDS
Layne Refrigeration Service
220 E. State St., Redlands, Calif.
RIVERSIDE
Graham, Carl E.
4019 Seventh St., Riverside, Calif.
SACRAMENTO
Electric & Refrigeration Service
1514 "F" St., Sacramento, Calif.
Independent Refrigeration Service
815 Thirteenth St., Sacramento, Calif.
Miller Sheet Metal Works
522 "I" St., Sacramento, Calif.
SAN DIEGO
Electric Refrigeration Service
3576 Felton St., San Diego, Calif.
General Refrigeration Service
3824 32nd St., San Diego, Calif.
Heilborn, Fred A., 1446 Fifth Ave., San Diego
Myers Servel Electric Refrigeration Service,
R. L., 748 "F" St., San Diego, Calif.
Robertson Brothers
1328 Fifth Ave., San Diego, Calif.
Wood Service Co.
4163 44th St., San Diego, Calif.
SAN FRANCISCO
Cochran & St. John
952 Mission St., San Francisco, Calif.
Detsch & Co., A. J.
341 10th St., San Francisco, Calif.
Electric Refrigeration Service
1475 Fourth Ave., San Francisco, Calif.
Frigeration Sales & Service
1460 Lombard St., San Francisco, Calif.
Mechanical Ice Man, The
106 Olive St., San Francisco, Calif.
Pacific Electric Refrigerating Co.
23 Lexington, San Francisco, Calif.
Refrigeration Maintenance Corp., Ltd.
104 Olive St., San Francisco, Calif.
Scott Buttner Refrigeration Co., Ltd.
1452 Bush St., San Francisco, Calif.
Wharton Refrigeration Service
1538 Pine St., San Francisco, Calif.

SAN GABRIEL
Conklin, Earl W.
949 Ramona Blvd., San Gabriel, Calif.
SAN JOSE
Ketch, E. A.
681 No. San Pedro St., San Jose, Calif.
SANTA ANA
Burgess Repair Shop
1246 S. Main St., Santa Ana, Calif.
Hills Refrigeration Service
405 N. Birch St., Santa Ana, Calif.
Refrigerator Service Co.
1220 W. 8th St., Santa Ana, Calif.
Scott Refrigeration Service, W. B.
1050 W. Second St., Santa Ana, Calif.

SANTA MONICA
Bay Cities Technical Service
724 Montana St., Santa Monica, Calif.
Bay City Refrigeration Service
1009 Montana Ave., Santa Monica, Calif.
STOCKTON
Electric Refrigeration Service
332 E. Weber Ave., Stockton, Calif.
Modern Refrigeration Service
220 E. Noble, Stockton, Calif.
VENTURA
Bibby, Dick
27 So. California St., Ventura, Calif.
Coast Radio & Refrigeration Service
67 So. California St., Ventura, Calif.
VISALIA
Beckner Refrigerator Service, Visalia, Calif.
Berry, Ray, 214 W. Main St., Visalia, Calif.

COLORADO

DENVER
Bateman, G. F., 1854 Arap Ave., Denver, Colo.
Cullyford Plumbing & Heating Co.
1210 California Ave., Denver, Colo.
Curran Refrigeration Service
2921 W. Douglas, Denver, Colo.
Public Service Co. of Colorado
15th & Champa, Denver, Colo.
Refrigeration Engineering Co.
809 E. Colfax Ave., Denver, Colo.
Refrigeration Service Co.
1517 Blake St., Denver, Colo.
Refrigeration Service Co.
1574 Milwaukee Ave., Denver, Colo.
Refrigeration Service Co.
1485 St. Paul St., Denver, Colo.

CONNECTICUT

BRIDGEPORT
Bertelson, Oscar B.
3008 Fairfield Ave., Bridgeport, Conn.
Hart Eddie Dist., Inc.
308 Fairfield Ave., Bridgeport, Conn.
Josephson, Jack, 314 Dover St., Bridgeport
Modern Elec. Equipment Co.
75 Fairfield Ave., Bridgeport, Conn.
GUILFORD
Page, Carlton E., 62 York St., Guilford, Conn.
HARTFORD
Automatic Refrigerating Co.
618 Capitol Ave., Hartford, Conn.
Murphy, Jr., Refrigeration Service
14 Stedman St., Hartford, Conn.
Newton Parsons Co., 123 Ann St., Hartford

NEW HAVEN
Bidwell, E. B.
2553 Whitney Ave., New Haven, Conn.
Electric Refrigeration and Burner Service
33 Harding Place, New Haven, Conn.
General Equipment & Service Co.
1080 Chapel, New Haven, Conn.
New Haven Building Maintenance Co.
114 George, New Haven, Conn.
PLAINVILLE
Bill Harte Refrigeration Service
(Formerly Refrigeration Inspection & Maintenance Service)
300 East St., Plainville, Conn.
STAMFORD
Chilaire Electric Refrigeration Co.
110 Courtland Hill, Stamford, Conn.
Parshall, D. D., P. O. Box 437, Stamford
WATERBURY
Connecticut Light & Power Co., Waterbury

DELAWARE

WILMINGTON
Howell Co., 922 West 4th St., Wilmington
Poole Electric Shop
9th & Market St., Wilmington, Del.

DISTRICT OF COLUMBIA

WASHINGTON
Allen & Co., Mitchell
1818 "E" St. N. W., Washington, D. C.
Automatic Refrigerating Service Co.
1004 Pennsylvania Ave., N. W., Washington
Bendette, Nathan E.
1438 Meridian Pl. N. W., Washington, D. C.
Carroll's Fix-It Shop
719 "H" St. N. W., Washington, D. C.
Colony Radio Service
4835 Georgia Ave. N. W., Washington, D. C.
D. C. Refrigeration Engineers
2425 First St. N. W., Washington, D. C.
Domestic Service Corp.
1706 Connecticut Ave. N. W., Washington
Electrical Refrigeration Service Co.
2805 Rhode Island Ave., N. E.
Washington, D. C.
General Service Electric Co.
3610 Georgia Ave. N. W., Washington, D. C.
Georgetown Refrigerator Repair Shop
3326 "M" St. N. W., Washington, D. C.
Isis, M., 808 Ninth Ave. N. W., Washington
McCutchen Engineering Co.
1108 16th St. N. W., Washington, D. C.
Refrigeration Service Co.
2214 14th St. N. W., Washington, D. C.
Servel Service Co.
615 Otis Place, N. W., Washington, D. C.
Uthoff, Edwin J.
72 "E" St. N. W., Washington, D. C.
Westerman, J. H.
507 Rhode Island Ave. N. E., Washington

FLORIDA

ARLINGTON
Handley, William, Box 28, Arlington, Fla.
BRADENTON
Whitaker Radio Sales Co.
535 Thirteenth St., Bradenton, Fla.
CLEARWATER
Squire's Electrical Refrigeration Service, J. M.
Box 3251, Clearwater, Fla.
DAYTONA BEACH
Moody, W. L.
120 Taylor St., Daytona Beach, Fla.

JACKSONVILLE
Automatic Electric Equipment Co.
209 W. Adams St., Jacksonville, Fla.
Refrigeration Service Co.
536 Pine St. So., Jacksonville, Fla.
Refrigeration Service & Supply Co.
506 Riverside Ave., Jacksonville, Fla.
Wightman, J. D.
1366 Challen Ave., Jacksonville, Fla.
Wildner, F. O., 315 West 18th St., Jacksonville
LAKELAND
Hyde's Radio Shop
1017 Greenwood St., Lakeland, Fla.
Odocek, Lloyd, Lakeland, Fla.
Radio Electric Service Corp.
306 S. Ry, Lakeland, Fla.

LAKE WALES
Tibado, C. H., Box 536, Lake Wales, Fla.
MIAMI
Diemer Co., O., 1130 S. W. Eighth St., Miami.
Ice Machine Service Corp.
911 N. E. First Ave., Miami, Fla.
Merkowitz & Resnick, Inc.
839 W. Flagler St., Miami, Fla.
Refrigerator Service Co.
6 S. W. 11th Ave., Miami, Fla.
NEW SMYRNA
Robertson Settle Electric Co.
404 Canal St., New Smyrna, Fla.

PALATKA
Thomas, Val C.
Reid & First Sts., Palatka, Fla.
ST. PETERSBURG
R. & N. Cash Register Co.
852 First Ave. N., St. Petersburg, Fla.
TAMPA
Bell Electric Co.
206 S. Franklin St., Tampa, Fla.
Fisher Electric Co., 203 Twigg, Tampa, Fla.
General Refrigeration Service
1700 Grand Central Ave., Tampa, Fla.
Stanford Co., E. A., 1806 Franklin, Tampa
Tampa Refrigeration Co.
716 Grand Central Ave., Tampa, Fla.

GEORGIA

ATLANTA
Carnell, T. L.
329 W. Peachtree St., Atlanta, Ga.
Hooper, T. W., 978 Peachtree N. E., Atlanta
Jones, E. A., 1414 Fair St. S. E., Atlanta, Ga.
Macy Radio Service, Inc.
602 Spring St. N. W., Atlanta, Ga.
Music Shop, Inc., The
214 Mitchell St., S. W., Atlanta, Ga.
Service Sheet Metal Co.
112 Edgewood Ave. N. E., Atlanta, Ga.
Shannon Refrigerator Repair Co.
519 Fair St. S. E., Atlanta, Ga.
AUGUSTA
Powell, Mr., c/o J. B. White & Co., Augusta
CAMILLA
Roles, A. R., Camilla, Ga.
FITZGERALD
Mechanical Refrigerating Co., Fitzgerald, Ga.
SYLVESTER
Hill House Hardware Co., Sylvester, Ga.

ILLINOIS

AURORA
Coats Garage, 56 S. LaSalle, Aurora, Ill.
BARTLETT
Hollinger, P. G., Route 1, Bartlett, Ill.
CHAMPAIGN
Tinkey Elect. Refrig. Service, John A.
207 W. Springfield Ave., Champaign, Ill.
CHICAGO
A-1 Refrigerator Repair Co.
851 W. 86th St., Chicago, Ill.
All Makes Refrigeration Service Co., Chicago
Apex Refrigeration Service Co.
2311 N. Monticello Ave., Chicago, Ill.
Building Equipment Co.
712 N. Cicero St., Chicago, Ill.
Capitol Refrigerating Service
3034 S. Trumbull Ave., Chicago, Ill.
Chicago Refrigeration Service Co.
360 E. Grand Ave., Chicago, Ill.
Commodore Electric Co.
521 N. Wells St., Chicago, Ill.
Complete Refrigeration Service
1544 Glenlake Ave., Chicago, Ill.
Decker Co., P. M., 6 E. Lake St., Chicago, Ill.
Electric & Refrigeration Service Co.
1415 Highland Ave., Chicago, Ill.
Electric Refrigerator Service
4427 W. Harrison St., Chicago, Ill.
Electric Refrigeration Co.
4346 W. North Ave., Chicago, Ill.
Electric Refrigeration Service Co.
7453 N. Clark St., Chicago, Ill.
Garrard Engineering & Mfg. Co.
559 W. Lake St., Chicago, Ill.
Great Northern Refrigeration Service Co.
3553 N. Halstead St., Chicago, Ill.
Ideal Heating Co.
6316 Wentworth Ave., Chicago, Ill.
Jennings, John H., 7227 Jeffery, Chicago, Ill.
Keystone Heating Co.
844 N. Keystone Ave., Chicago, Ill.
Koscal, C. V., 2418 W. Corten St., Chicago
Logemann, Harry W.
4725 McLean Ave., Chicago, Ill.
Mackham Refrigerator Sales & Service Corp.
220-222 W. Huron St., Chicago, Ill.
Masters Electric Refrig. Service, J. D.
3031 Sheffield Ave., Chicago, Ill.
Matchless Refrigeration Service Co.
2347 Cleveland Ave., Chicago, Ill.
Mechanical Refrigeration Co.
4728 Kenmore Ave., Chicago, Ill.
National Refrigeration Service, Inc.
735 N. LaSalle, Chicago, Ill.
Northwest Refrigeration Service & Supply Co.
130 N. Western Ave., Chicago.
Pruyn, B. J., 6326 Giddings St., Chicago, Ill.
Rayburn & Sons, W. S.
5946 Eggleston Ave., Chicago, Ill.
Refrigeration Maintenance Co.
365 E. Illinois St., Chicago, Ill.
Rex Refrigeration Service
936 E. 79th St., Chicago, Ill.
Reynolds, C. I., 8439 S. Chicago Ave., Chicago
Skipple Service, 13-15 N. Morgan St., Chicago
Siedenbecker, H.
1356 N. Lorel Ave., Chicago, Ill.
Stockton, E. M., 160 N. Wells, Chicago, Ill.
Waldmann, A. W., 5912 N. Clark St., Chicago
DANVILLE
Armstrong, R. M., Danville, Ill.
(Continued on Page 11, Column 1)

Nationwide Coverage

with branch sales offices, motor warehouses,
and service stations

Assures Quick Service

when a replacal motor or a motor-part is
urgently needed



Above—Location of
Wagner's 26 branch
offices and service
stations.

At Left—Airplane
view of the Wagner
plant, located at St.
Louis, in the center
of the U. S. A.



You realize the importance of quick service when a replacal motor or a repair part is needed. So does Wagner—hence, 26 branch offices, warehouses and service stations in all parts of the country. Each service station has a complete stock of motor-parts, available for immediate shipment.

Your customers expect uninterrupted refrigeration, and immediate repairs or replacals when trouble develops. Wagner's nationwide coverage is your assurance that your customers need not be disappointed.

When there's trouble with any make of motor, or any information wanted on motors, get in touch with Wagner's nearest branch.

Wagner Electric Corporation
6400 Plymouth Avenue, Saint Louis, U.S.A.

MOTORS TRANSFORMERS FANS BRAKES

5533-1.

Manufacturers and Distributors of REFRIGERATION ACCESSORIES AND PARTS

We stock all kinds of Refrigeration Gases and Replacement Parts for all makes of Electrical Refrigerators.

We specialize on Commercial Installations and are equipped to service and install all makes of refrigeration units, maintaining a 24-hour Electrical Refrigeration Service Department.

CHICAGO REFRIGERATION SERVICE CO., Geo. Monjian, President
360-62 E. Grand Avenue Chicago, Illinois

DIRECTORY

OF INDEPENDENT SERVICE COMPANIES

(Continued from Page 10, Column 5)

DANVILLE, ILL.
Bostick, J. W.
213 W. Harrison St., Danville, Ill.
Millage, N. N.
319 N. Franklin St., Danville, Ill.

DECATUR
Dobson, Morley, 341 Burtch St., Decatur, Ill.
People's Furniture Co.
E. Main & State Sts., Decatur, Ill.

ELGIN
Hurlburt, Walter M.
559 Mann Place, Elgin, Ill.

EVANSTON
Evanston Refrigeration Service Co.
1413 Elmwood Ave., Evanston, Ill.

GALESBURG
Wake Electric Shop
57 N. Cherry St., Galesburg, Ill.

GEORGETOWN
Hagenson, H., Georgetown, Ill.

GLEN ELLYN
Wardle Radio Laboratories
526 Duane St., Glen Ellyn, Ill.

HARVEY
Bark, L. O., 15526 Center Ave., Harvey, Ill.

HEYWORTH
Ball, Truman J., Heyworth, Ill.

KANKAKEE
Lassers Furniture Co.
160 S. Schuyler St., Kankakee, Ill.

KAWAHEE
Star Electric Co.
106 N. Main St., Kaweah, Ill.

ONARGA
Clifton & Whiteside, Onarga, Ill.

PEORIA
Radio Electric Co.
901 North Perry Ave., Peoria, Ill.

PINCKNEYVILLE
Dillon, Guy, Pinckneyville, Ill.

QUINCY
Lafferty, C. K.
503 North Sixth St., Quincy, Ill.

ROCKFORD
All-Makes Refrigerator Service Co.
305 E. State St., Rockford, Ill.

SPRINGFIELD
Greig & Co., E. P.
423 E. Adams St., Springfield, Ill.

WAUKEGAN
Strang, E. A., 913 Grand Ave., Waukegan

WHEATON
Portner Engineering Service, J. A.
225 W. Front St., Wheaton, Ill.

WINNETKA
Refrigerator Service Co.
(Subsidiary of Kordick Electric Co.)
658 Center St., Winnetka, Ill.

INDIANA

ANDERSON
The Mc's Service, 1815 Arrow Ave., Anderson

ELKHART
McMurray's Service, 222 S. Main St., Elkhart

FT. WAYNE
Archer, L. B.
1215 Roy St., Ft. Wayne, Ind.

FOULKE
Foulke Radio Sales & Service
2160 Fairfield Ave., Ft. Wayne, Ind.

INDIANA SERVICE CO.
122 E. Wayne, Ft. Wayne, Ind.

GARY
Gary Wayne Home Equipment Co.
137 W. Ridge Rd., Gary, Ind.

LIGHTHOUSE
Lighthouse Electric Co.
570 Washington St., Gary, Ind.

PEOPLE'S HDWE. CO.
688 Broadway, Gary, Ind.

HAMMOND
Northern Indiana Public Service Co.
Hammond, Ind.

SOUTHMOOR
Southmoor Apt. Hotel
Hohman at Elizabeth, Hammond, Ind.

INDIANAPOLIS
Cox Co., Inc., Walter
206 S. Pennsylvania St., Indianapolis, Ind.

GENERAL REFRIGERATION SERVICE
2341 Piersen Ave., Indianapolis, Ind.

MASSIE, H. Y.
1427 Roache, Indianapolis, Ind.

REFRIGERATION AND APPLIANCES REPAIRS, INC.
34 W. North St., Indianapolis, Ind.

SERVER, P. Sr.
32 N. LaSalle St., Indianapolis, Ind.

WILKS DISTRIBUTING CO. OF INDIANA
Indianapolis, Ind.

MUNCIE
Fidler, H. D.
311 E. North St., Muncie, Ind.

NEW ALBANY
Bedenbaugh, J. W.
617 E. Tenth St., New Albany, Ind.

SOUTH BEND
Buell Hauser, Inc.
307 Lincolnway E., South Bend, Ind.

MEYER & SON, G. E.
115 W. Jefferson Blvd., South Bend, Ind.

SOUTH BEND REFRIGERATION CO.
522 Lincolnway W., South Bend, Ind.

VALPARAISO
Van Ness Electric Co.
63 W. Lincolnway, Valparaiso, Ind.

VINCENNES
Wife Saving Station, The
117 North Second St., Vincennes, Ind.

IOWA

PURITY CORP., ATLANTIC, IOWA

CEDAR RAPIDS
Kep's Refrigeration Service
215 First St. S. E., Cedar Rapids, Iowa

CLINTON
Crocker & Son, F. C.
137 Third Ave. So., Clinton, Iowa

DAVENPORT
Hammd, Henry J.
2634 Carey Ave., Davenport, Iowa

JONES & CO., M. V.
116 West Third St., Davenport, Iowa

DES MOINES
Anderson Electric Refrigeration Service Co.
817 Hull Ave., Des Moines, Iowa

DES MOINES HOME RADIO SERVICE
210 Court Ave., Des Moines, Iowa

DES MOINES REFRIGERATION SERVICE CO.
909 Walnut St., Des Moines, Iowa

JACKSON'S ELECTRIC REFRIGERATION SERVICE
650 27th St., Des Moines, Iowa

JOHNSON MFG. CO.
1107 Cherry St., Des Moines, Iowa

MUNN & CASADAY CO.
910 Grand Ave., Des Moines, Ia.

REFRIGERATION SERVICE REPAIR
1433 Walnut St., Des Moines, Ia.

HARLAN
Harlan Auto Electric
805 Cort St., Harlan, Iowa

MASON CITY
Loring-Farmer Co., Mason City, Ia.

WATERLOO
Carter, R. W., 125 Irving, Waterloo, Iowa

HARTLEIP EQUIPMENT CO.
863 W. Fourth St., Waterloo, Iowa

WEST SIDE
West Side Electric Co., West Side, Iowa

KANSAS

ATCHISON
Blythe's Electric Store
608 Commercial St., Atchison, Kan.

EMPORIA
Lowe, Thomas A.
527 Exchange, Emporia, Kan.

FT. RILEY
Stewart, Leland R.
c/o Quartermasters Office, Ft. Riley, Kan.

HORTON
Gampper Refrigeration Service, H. J.
Horton, Kan.

HUTCHINSON
Pattinson Electric & Supply Co.
517 N. Main St., Hutchinson, Kan.

INDEPENDENCE
Electric Shop, Independence, Kan.

IOLA
Schell Refrigeration Service, Leon
511 South St., Iola, Kan.

KANSAS CITY
Bunting Hardware Co.
510 Minnesota Ave., Kansas City, Kan.

GILTNER REPAIR SHOP
1142 Quindaro Blvd., Kansas City, Kan.

MANHATTAN
Allman, Fred
1118 Vattier, Manhattan, Kan.

TOPEKA
Ela Refrigeration Service, R. E.
515 W. 10th St., Topeka, Kan.

KENTUCKY

COVINGTON
Refrigeration Service Co.
416 Philadelphia St., Covington, Ky.

LOUISVILLE
Kerbel Co., The C. J.
116 S. Campbell, Louisville, Ky.

MEYER, LEO H.
1032 South Fifth St., Louisville, Ky.

REFRIGERATION SERVICE CO.
927 W. Main St., Louisville, Ky.

LOUISIANA

BATON ROUGE
Champagne Service, Inc.
235 Convention, Baton Rouge, La.

LAKE CHARLES
Vittello Refrigeration Service
613 Division St., Lake Charles, La.

NEW ORLEANS
A. B. C. Oil Burner & Heating Co., Inc.
1907 St. Charles Ave., New Orleans, La.

ACKERMAN BOX CO.
923 Philip, New Orleans

AUTOMATIC REFRIGERATION SERVICE CO.
1536 Terpsichore St., New Orleans, La.

ELECTRIC SERVICE, INC.
813 Howard Ave., New Orleans, La.

HOME SERVICE CO.
1210 St. Charles Ave., New Orleans, La.

LEIBE, GEORGE
426 S. Jefferson Davis Parkway, New Orleans

NEW ORLEANS ICE BOX REPAIR CO.
5009 Tchoupitoulas, New Orleans, La.

STEWART CORP., S. B.
210 Bourbon St., New Orleans, La.

UNIVERSAL REFRIGERATION SERVICE CO.
1531 Fern St., New Orleans, La.

WOODWARD, WIGHT & CO., LTD., NEW ORLEANS

MAINE

BANGOR
Flagg Co., R. M., 100 Haddon St., Bangor, Me.

PORTLAND
Portland Electric Co.
St. No. 38, Portland, Me.

SOUTH BREMER
Arsenault, Daniel O.
18 Mill St., South Bremer, Me.

MARYLAND

BALTIMORE
"A" Guaranteed Refrigeration Service Co.
1718 Longwood St., Baltimore, Md.

BETTER REFRIGERATING SERVICE CO.
735 S. Hanover St., Baltimore, Md.

GOVANS ELECTRICAL REFRIGERATION SERVICE
5114 Craig Ave., Baltimore, Md.

HERBOLD & SONS, CHAS.
2768 W. North St., Baltimore, Md.

MEYERS REFRIGERATION CO.
3126 Edmondson Ave., Baltimore, Md.

BRENTWOOD
Building Service Co.
4411 Yvy St., Brentwood, Md.

CUMBERLAND
Potomac Edison Co., The, Cumberland, Md.

FREDERICK
Waltz, Paul C.
201 W. South St., Frederick, Md.

HAGERSTOWN
Ridgely Electric
23 E. Franklin St., Hagerstown, Md.

MASSACHUSETTS

BOSTON
Automatic Refrigerating Co.
185 Lincoln, Boston, Mass.

EASTERN SERVICE REFRIGERATOR CO.
80 Federal, Room 411, Boston, Mass.

JARVIS ENGINEERING CO.
51 Ellery, Boston

MCDONOUGH, R. J.
1462 Columbus Ave., Boston, Mass.

BROOKLINE
Refrigeration Service Co.
230 Harvard St., Brookline, Mass.

CAMBRIDGE
Allied Refrigeration Co.
183 Massachusetts Ave., Cambridge, Mass.

MILLER & SEDDON CO., INC.
308 Massachusetts Ave., Cambridge, Mass.

CHELSEA
Ammonia Refrigerator Service Co.
Chelsea, Mass.

Any Missing?

Service companies whose names do not appear in this list are asked to communicate with ELECTRIC REFRIGERATION NEWS, 550 Maccabees Bldg., Detroit, Mich., giving full address and company name on a business letterhead. This will provide for the inclusion of your company in future publications of this directory.

TIGAR CORP., THE
211-213 Second St., Chelsea, Mass.

DORCHESTER
Ford Refrigerator Service
19 Middleton St., Dorchester, Mass.

FALL RIVER
Smith, K. R., 18 Pear St., Fall River, Mass.

GEORGETOWN
Moore, J. Irwin
137 North, Georgetown, Mass.

LOWELL
Eastern Service Refrigerator Co.
360 Jackson St., Lowell, Mass.

LOWELL ELECTRIC LIGHT CORP.
29 Market St., Lowell, Mass.

LYNN
Appliance Service Co.
10 Winthrop Court, Lynn, Mass.

PENDER, INC., R. T.
33 Sutton, Lynn, Mass.

PORTER, C. E.
17 Stewart St., Lynn, Mass.

NEW BEDFORD
Bacon Co., W. L.
514 County, New Bedford, Mass.

MARION GENERAL STORE
Main St., New Bedford, Mass.

STANDARD ELECTRICAL CO.
734 Pleasant St., New Bedford, Mass.

W. B. RADIO & ELECTRIC CO.
698 Purchase, New Bedford, Mass.

SPRINGFIELD
Allen Refrigeration Service, G. F.
51 Orlando St., Springfield, Mass.

CITY REFRIGERATION SERVICE
81 Cedar St., Springfield, Mass.

LAMBERT, H. C.
31 Elm St., Springfield, Mass.

WATERTOWN
Electric Refrigeration Service Co.
283 Western Ave., Watertown, Mass.

WOLLASTON
Suburban Service Co.
81 Thornton St., Wollaston, Mass.

WORCESTER
Central Machine Works, Inc.
87 Mechanic, Worcester, Mass.

COGHILIN, INC.
280 Main, Worcester, Mass.

PETE'S ELECTRIC SERVICE
108 Ward St., Worcester, Mass.

MICHIGAN

ADRIAN
Nichols Bros., Adrian, Mich.

ANN ARBOR
Mack & Co., Ann Arbor, Mich.

BATTLE CREEK
Calhoun Plumbing & Heating Co., Inc.
Battle Creek, Mich.

CONSUMERS POWER CO., BATTLE CREEK, MICH.

BAY CITY
Latham Hardware Co.
308 Columbus Ave., Bay City, Mich.

REFRIGERATION SERVICE CO.
211 S. Henry St., Bay City, Mich.

BLISSFIELD
Saxton, James B.
c/o National Bundle Tyer Co.
Blissfield, Mich.

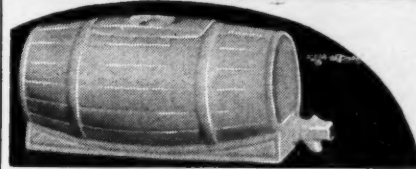
CAPAC
Pray, O. A., Capac, Mich.

CHESANING
Chesaning Auto Electric Service
Chesaning, Mich.

COLUMBIANVILLE
Osborne, R. C., Columbiaville, Mich.

(Continued on Page 12, Column 1)

Testing Laboratory
For refrigerators
and refrigerating equipment
George B. Bright Co.
Refrigerating Engineers and Architects
2615 12th St., Detroit, Mich.



A REAL DRAWING CARD

A practical water cooler and dispenser. Reservoir, non-tip base and push button controlled faucet; all of glistening, sanitary Glazed Vitrified Porcelain.

AS INDUCEMENT TO BUY A REFRIGERATOR NOW

Just the thing to tip an immediate sale. It belongs in the refrigerator. Priced low enough for your use as a free gift.

AS A REWARD FOR TURNING IN A LIST OF PROSPECTS

Women will turn in lists of names of prospective purchasers for this good looking, useful and new item.

BIG FLASH—AND COSTS LITTLE IN QUANTITIES

Write Today for Prices

Porcelier Mfg. Co., Greensburg, Pa.

SANI-SHIELD

for
Refrigerator Doors

Fits over top corner of door, held by tension shoulder. Easily detached for washing. Provides additional sanitary feature. Soft white or light green rubber, ornamented with smart design. Fits most makes. Send for sample and prices.

Ask about the other important refrigerator accessories we make

THE AETNA RUBBER CO.
Ashtabula Ohio

ATTENTION SERVICE MEN!

"GENUINE DETROIT"
REFRIGERATION ACCESSORIES

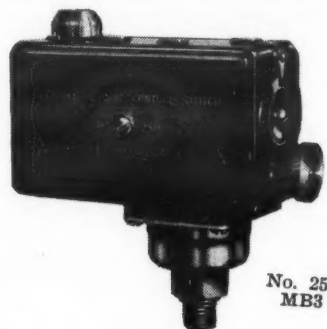
The No. 672 "Genuine Detroit" Automatic Expansion Valve is for use with domestic and commercial refrigerating machines for single box installations.

The No. 673 "Genuine Detroit" Thermostatic Expansion Valve extends the application of the dry evaporator to multiple systems and also increases the efficiency of single evaporator systems.

Due to the large capacity range and variety of outlet connections available these Valves can readily be applied to any existing refrigerating systems using Methyl Chloride, Sulphur Dioxide, Freon (F-12) or any refrigerant not detrimental to brass.

Whatever your particular problem may be, our engineers with years of experience will be pleased to assist you.

Do not
hesitate
to call
upon
us.



No.
250
Control
Switch

Carries 110 to 220 volts up to 1 H.P. Enclosed in neat Bakelite case. Adjustment for Cut-in or Cut-out quickly and easily made.

Model MB-3 for Low Side Pressure Control. Range 20 in. vac. to 40 lbs. Differential 5 lbs. minimum to 25 lbs. maximum.

Model ML-1 for Temperature Control. Range minus 30° to plus 60° or 10° to 70°. Differential 3° minimum to 15° maximum.

Model MIBA Dual Control for Low Side Pressure Control and High Side Cut-out. Range 20 in. vac. to 40 lbs. Differential 5 lbs. minimum to 25 lbs. maximum. High Side Cut-out 125 lbs. to 200 lbs. or 70 lbs. to 130 lbs.

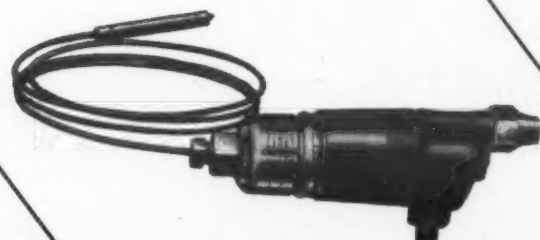
Model MIBL Dual Control for Temperature and High Side Cut-out. Range minus 30° to plus 60° or 10° to 70°. Differential 3° minimum to 15° maximum. High Side Cut-out 125 lbs. to 200 lbs. or 70 lbs. to 130 lbs.



No. 250
MIBL



No. 672



No. 673

Insist on "Genuine Detroit" Products. Write for catalog

DETROIT LUBRICATOR COMPANY

Trumbull, Lincoln, Marquette & Viaduct

DETROIT, Mich., U. S. A.

Lubricators • Carburetors • Valves

Automatic Controls for temperature, pressure, humidity. Refrigeration, Oil Burner and Heating Accessories

Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

NORGE
ROLLATOR REFRIGERATION

BAKELITE MOLDED PARTS FOR ELECTRIC REFRIGERATORS

Our Engineering Department will cooperate with you in the design of molded parts
Send for Catalog No. 101

CHICAGO MOLDED PRODUCTS CORP.
2155 Walnut St. Chicago, U. S. A.

DIRECTORY

OF INDEPENDENT SERVICE COMPANIES

(Continued from Page 11, Column 5)

DETROIT

Abel, Charles S., 14901 Mendota, Detroit
 Acme Refrigeration Co.
 4465 Chene St., Detroit, Mich.
 Arctic Refrigerated Service
 3025 Howard, Detroit, Mich.
 Arrow Refrigeration Service
 16155 Montevista, Detroit, Mich.
 B. I. H. Refrigeration Service
 14913 E. Jefferson, Detroit, Mich.
 Burge Ice Machine Co.
 10407 Cedarlawn, Detroit, Mich.
 Campbell Electric Refrigeration Service
 1925 Elsmere, Detroit, Mich.
 Consolidated Service
 14361 Asbury Park, Detroit, Mich.
 Detroit Ice Machine Co.
 2615 12th St., Detroit, Mich.
 Detroit Refrigeration Service Co.
 5810 W. Warren Ave., Detroit, Mich.
 Electric Motors Service
 4229 Commonwealth, Detroit, Mich.
 Electric Refrigeration Service
 13234 Appoline St., Detroit, Mich.
 Electric Service Co., 8810 Puritan, Detroit
 Euth-Lambrecht Co.
 2015 Michigan Ave., Detroit, Mich.
 Ewing Refrigeration Service
 3100 Alter Road, Detroit, Mich.
 Frigirator Service Co.
 10473 Northlawn Ave., Detroit, Mich.
 Jacques Refrigeration Service Co.
 320 Beaubien, Detroit, Mich.
 K. L. A. Laboratories
 536 E. Larned, Detroit, Mich.
 McFeely LeRoy, 2990 Lenox, Detroit, Mich.
 Mercier & Clark, Inc.
 6523 Grand River Ave., Detroit, Mich.
 Paquette Ice Machine Service
 5910 Malcolm, Detroit, Mich.
 Place, A. E., 12339 Hamilton Ave., Detroit
 Plassey, A. B., 2418 Stair St., Detroit, Mich.
 Pollock Bros. Co.
 Room 602, Downtown YMCA, Detroit, Mich.
 Servel Authorized Service
 12 Applegrove, Detroit, Mich.
 Snyder Electric Service
 3463 Buckingham, Detroit, Mich.
 Square Deal Electric Refrigeration Service
 6611 Maxwell, Detroit, Mich.
 Stewart-Electric Service
 13300 Mack Ave., Detroit, Mich.
 United Motors Service, Inc.
 3055 W. Grand Blvd., Detroit, Mich.
 Vallee Bros. Refrigeration Service
 1432 Pallister, Detroit, Mich.
DEXTER
 Lovell, J. Art., Dexter, Mich.
ECORSE
 Parent Ice Machine Service, A. J.
 12 Apple Grove, Ecorse, Mich.
FLINT
 Electric Refrigerator Sales & Service
 820 Page St., Flint, Mich.
 Electric Refrigerator Service
 753 E. Wood St., Flint, Mich.

Engle, J. A., 606 Warren St., Flint, Mich.
 Johnston Romain, Inc., 119 E. 2nd, Flint
 Mansfield, H. B.
 2734 1/2 N. Saginaw St., Flint, Mich.
GRAND RAPIDS
 Ackerman Electrical Supply
 325 Scribner Ave. N. W., Grand Rapids, Mich.
 Boot & Co.
 115 W. Fulton St., Grand Rapids, Mich.
 Consumers Power Co., Grand Rapids, Mich.
 Fix-All Shop
 1013 W. Leonard St., Grand Rapids, Mich.
GRANT
 Eckstrom & Saur, Grant, Mich.
HOLLAND
 I. X. L. Machine Shop
 Seventh St., Holland, Mich.
IONIA
 Gable, Henry, 425 W. Main St., Ionia, Mich.
IRON MOUNTAIN
 Allison, W. L.
 R. R. Box 111, Iron Mountain, Mich.
ITHACA
 Barden & Sons, J. L., Ithaca, Mich.
KALAMAZOO
 Household Necessities Co., Kalamazoo, Mich.
 Kalamazoo Refrigeration Service
 1120 N. Church St., Kalamazoo, Mich.
LANSING
 Henkel's Radio Shop
 125 W. Washtenaw, Lansing, Mich.
 Radio Service Co.
 121 1/2 W. Washtenaw St., Lansing, Mich.
LINWOOD
 Barrett & Son, J. C., Linwood, Mich.
LUDINGTON
 Michigan Public Service Co.
 123 West Ludington Ave., Ludington, Mich.
MIDLAND
 Home Appliance & Refrigeration Service
 504 E. Main St., Midland, Mich.
MT. CLEMENS
 Macomb Refrigeration Co.
 Mt. Clemens, Mich.
MT. PLEASANT
 Breidenstein & Kane, Mt. Pleasant, Mich.
MUSKEGON
 McCurry, L. R.
 2141 Harrison Ave., Muskegon, Mich.
OWOSSO
 Cook & Cook, Owosso, Mich.
 Loynes, H. W., 1110 Adams St., Owosso, Mich.
PINCONNING
 Harris & Whyte, Pinconning, Mich.
PORT HURON
 Nottley Refrigerator Co.
 2619 Tenth St., Port Huron, Mich.
ROYAL OAK
 Acorn Electric Refrigeration Co.
 819 McLean Ave., Royal Oak, Mich.
 Hay, B. W.
 622 Wyandotte Ave., Royal Oak, Mich.
SHEPHERD
 Upton, J. L., Shepherd, Mich.
TRAVERSE CITY
 Michigan Public Service Co.
 Traverse City, Mich.

MINNESOTA

DULUTH
 Dunning, Inc., A. S.
 224 W. First St., Duluth, Minn.
 Gartner Refrigerating Co.
 111 W. Michigan St., Duluth, Minn.
MINNEAPOLIS
 Electric Refrigerating Service Co.
 1024 W. Broadway, Minneapolis, Minn.
 Jalsco Radio Service
 1215 Nicollet Ave., Minneapolis, Minn.
 Kremer Motor Co.
 1513 Hennepin Ave., Minneapolis, Minn.
 Refrigeration & Radio Service Co.
 Washington Ave. & Ontario St. E.
 Minneapolis, Minn.
 Refrigerator Sales & Service Co.
 316 S. Seventh St., Minneapolis, Minn.
 Wilson Refrigeration Service
 3425 34th Ave. S., Minneapolis, Minn.
ST. PAUL
 St. Paul Home Appliances Co.
 159 W. Fifth St., St. Paul, Minn.

MISSOURI

JOPLIN
 Burke Refrigeration Service Co., Joplin, Mo.
KANSAS CITY
 Carroll, John, 3000 Tracy Ave., Kansas City
 Majestic Refrigerator Service of Kansas City
 1515 Grand, Kansas City, Mo.
 Refrigeration Sales & Service
 1534 Walnut St., Kansas City, Mo.
 Refrigeration Service Co.
 3430 Michigan Ave., Kansas City, Mo.
 Reliable Refrigeration Service
 3000 Tracy Ave., Kansas City, Mo.
 Schreiber, W. F.
 16 E. 16th St., Kansas City, Mo.

Stigall Servicing Co.
 3608 Wabash Ave., Kansas City, Mo.
 Weber Electric Construction Co.
 4102 Main, Kansas City, Mo.
ST. JOSEPH
 Colbert Machinery Co., St. Joseph, Mo.
 Oil Burner Sales & Service
 713 S. Sixth St., St. Joseph, Mo.
ST. LOUIS
 Ace Hardware Co., 4051 Olive Ave., St. Louis.
 Brass & Copper Sales Co.
 2817 Laclede Ave., St. Louis, Mo.
 Electric Refrigeration Service Co.
 5878 Delmar Ave., St. Louis, Mo.
 Fielder, D. L., 3959 Easton Ave., St. Louis
 Hague, John
 4943 Buckingham Court, St. Louis, Mo.
 Link Refrigerator Service
 5459 Gravois Ave., St. Louis, Mo.
 Pennington Bro. Service
 3334 South Grand, St. Louis, Mo.
 Refrigerator Exchange Co.
 3538 Chouteau, St. Louis, Mo.
 Refrigeration Service Co.
 295 Natural Bridge, St. Louis, Mo.
 Service Electric Co.
 2145 67th St., St. Louis, Mo.
 Sinnwell, W., 4015 McRee Ave., St. Louis, Mo.
 Square Deal Battery Co.
 4353 Warne Ave., St. Louis, Mo.
SEDALIA
 Middleton Electric Co., H. A.
 212 S. Ohio St., Sedalia, Mo.
WEBSTER GROVE
 Webster Refrigeration Service Co.
 856 Marshal Ave., Webster Grove, Mo.

MONTANA

BOZEMAN
 Budd, D. H.
 30 West Main, Bozeman, Mont.

NEBRASKA

COLUMBUS
 Reuter, J. C., Columbus, Nebr.
DAVID CITY
 Beck Electric Shop, David City, Nebr.
FALLS CITY
 Faller, L. F., Falls City, Nebr.
LINCOLN
 Electric Refrigeration Co.
 300 South 13th St., Lincoln, Nebr.
 Werschky, F. A., 923 S. 6th St., Lincoln, Nebr.
NORFOLK
 Bleich's Electrical Service
 103 South 13th St., Norfolk, Nebr.
OMAHA
 Industrial Electrical Works
 5130 S. 24th, Omaha, Nebr.
 Refrigeration Service
 210 N. 18th St., Omaha, Nebr.
ROSALIE
 Shulenberger Service Station, Rosalie, Nebr.

NEVADA

LAS VEGAS
 Refrigeration Service Shop
 15 Bridger St., Las Vegas, Nev.

NEW HAMPSHIRE

WEST LEBANON
 Sam's Second Hand Store
 West Lebanon, N. H.
WOODSVILLE
 Scruggs, Rhett R., Woodsville, N. H.

NEW JERSEY

ATLANTIC CITY
 Drolet, Charles H.
 6418 Ventnor Ave., Atlantic City, N. J.
CAMDEN
 Gordon & Melick
 780 Wright Ave., Camden, N. J.
 Gray, Paul R.
 2935 Carman St., Camden, N. J.
 Leo's Radio Shop
 307 Broadway, Camden, N. J.
CRANFORD
 General Service Co.
 10 Eastman St., Cranford, N. J.
EAST ORANGE
 Johnson, Welton V.
 241 S. Arlington Ave., East Orange, N. J.
EATONTOWN
 Kelvinator Refrigeration Service
 15 White St., Eatontown, N. J.
ELIZABETH
 Electric Refrigerator Repair Co.
 254 Union St., Elizabeth, N. J.
FORDS
 Refrigeration Service Co.
 21 William St., Fords, N. J.
GRANTWOOD
 Chase & Nolan Service
 699 Anderson Ave., Grantwood, N. J.
JERSEY CITY
 Eagle Electrical Refrigeration Service
 608 Communipaw Ave., Jersey City, N. J.
 First Independent Electric Refrigeration
 Service
 245 Sherman Ave., Jersey City, N. J.
 Jasper, Harry, 278 Newark, Jersey City, N. J.
 Montgomery Engineering Co.
 437 Montgomery St., Jersey City, N. J.
 Sanitary Plumbing Supply Co.
 239-241 Newark Ave., Jersey City, N. J.
 Tonnele Automobile Corp.
 157-159 Tonnele Ave., Jersey City, N. J.
NEWARK
 A-1 Refrigeration Service
 228 Hillside Ave., Newark, N. J.
 Binder Co., T. W., 26 S. Orange Ave., Newark
 Brody Refrigeration Service
 168 Washington St., Newark, N. J.
 Celiano, Alfred J., 166 Isabella Ave., Newark
 Electric Refrigerator Service Co. of New
 Jersey, 45 Branford Place, Newark, N. J.
 Estrada, M. I., 334 Belmont Ave., Newark
 Victor Flush Valve Co.
 395 15th Ave., Newark, N. J.
NEW BRUNSWICK
 Electric Appliance Service
 35-37 Albany St., New Brunswick, N. J.
OCEAN CITY
 Stackhouse, A. M.
 427 Bay Ave., Ocean City, N. J.
PASSAIC
 Passaic Plumbing Supply Co.
 824-836 Main St., Passaic, N. J.
PATERSON
 Page, Harry T.
 283 Market St., Paterson, N. J.
PHILLIPSBURG
 Rutkowski, Anthony
 312 Lincoln St., Phillipsburg, N. J.
PLAINFIELD
 Geddes, Myron W.
 136 Netherwood Ave., Plainfield, N. J.
SPRING LAKE
 Schwieters, Al
 420 Tuttle Ave., Spring Lake, N. J.
TRENTON
 Ervin, Charles H.
 R. F. D. No. 4, Trenton, N. J.
 Fell & Co., Frank
 128 E. Front St., Trenton, N. J.
 Frezon Refrigeration Service
 1600 Hamilton Ave., Trenton, N. J.

Radio Hospital
 103 Factory St., Trenton, N. J.
 Service Shop, 444 Garfield, Trenton, N. J.
UNION
 Refrigeration Maintenance Co., The
 1210 Higa Terrace, Union, N. J.
WEST NEW YORK
 Voorhees, Russell W.
 315 Sixth St., West New York, N. J.
WEST ORANGE
 Anderson, Alfred K.
 18 Pine St., West Orange, N. J.
WOODBURGH
 Electrical Refrigeration Service
 259 Main St., Woodbridge, N. J.

NEW MEXICO

ALBUQUERQUE
 Southwestern Engineering Supply Co.
 212 N. Third St., Albuquerque, N. Mex.

NEW YORK

ALBANY
 Brohm & Molitor
 257 S. Pearl St., Albany, N. Y.
 Champaign's Radio Store
 35 S. Pearl St., Albany, N. Y.
 Dennis, John H.
 264 Central Ave., Albany, N. Y.
 Eager, George (Formerly Electric
 Refrigeration Service)
 57 Morris St., Albany, N. Y.
 Henzel, Edmund, 48 Clinton, Albany, N. Y.
 McDowell & Balmer
 1012 Central Ave., Albany, N. Y.
 Shipley Construction & Supply Co.
 659 Broadway, Albany, N. Y.
 Smith, John W.
 26 Slingerland St., Albany, N. Y.
 Whitney & Co., W. M.
 47 N. Pearl St., Albany, N. Y.
 Wiechman Refrigerating Corp.
 236 S. Swan, Albany, N. Y.
BEONX
 Dill, Alfred
 1044 Washington Ave., Bronx, N. Y.
 Lewis, Edward
 1419 Macomb Rd., Bronx, N. Y.
BROOKLYN
 Alstott, Murray, 404 Foster Ave., Brooklyn
 Cwik, J. C., 127 Troutman St., Brooklyn
 Doody, James J., 345 16th St., Brooklyn, N. Y.
 Dunne & Matteson, 373 E. 51st St., Brooklyn
 Electra Refrigerator Service
 1138 Broadway, Brooklyn, N. Y.
 Electric Refrigeration Sales & Service Co.
 944 E. 43rd St., Brooklyn, N. Y.
 Johnston & Noesser, Inc.
 1163 Myrtle Ave., Brooklyn, N. Y.
 New York Eskimo Pie Corp.
 110 Bridge St., Brooklyn, N. Y.
 Robertson, A. G., 110 Park Ave., Brooklyn
 Select Refrigeration Co.
 341 Rogers Ave., Brooklyn, N. Y.
 United Refrigerator Co.
 37 Moultrie St., Brooklyn, N. Y.
BUFFALO
 Adam & Co., J. N., Buffalo, N. Y.
 Associated Refrigeration Service
 67 Peach St., Buffalo, N. Y.
 Cooney Refrigeration Co.
 493 Franklin St., Buffalo, N. Y.
 Independent Refrigeration Service Co.
 319 Roesch Ave., Buffalo, N. Y.
 Reinecke, A. D.
 67 Northumberland Ave., Buffalo, N. Y.
 Sullivan, J. J., 42 Auchinville St., Buffalo
 Weed & Co., Buffalo, N. Y.
CANTON
 Barber, S. E., Main St., Canton, N. Y.
CORONA
 City Electric Refrigeration Co.
 102-14 39th St., Corona, N. Y.
COXSACKIE
 Dolan, Frank
 107 South River St., Coxsackie, N. Y.
ELMHURST, L. I.
 R. V. Refrigeration Service
 8952 Queens Blvd., Elmhurst, L. I., N. Y.
ELMIRA
 Law, C. E., 310 Penn Ave., Elmira, N. Y.
FLORAL PARK, L. I.
 Mendell, A. F., Floral Park, L. I., N. Y.
HEMPSTEAD, L. I.
 Long Island Associated Service Co.
 1314 Main St., Hempstead, L. I., N. Y.
HOLLIS
 Refrigeration Service Co.
 89-27 198th St., Hollis, N. Y.
ITHACA
 Shelton, A. C.
 813 North Aurora St., Ithaca, N. Y.
JACKSON HEIGHTS, L. I.
 North Shore Electric Refrigeration
 Service Co.
 76-12 Roosevelt Ave.
 Jackson Heights, L. I., N. Y.
JAMAICA, L. I.
 Cooper & Cabaret, Jamaica, L. I., N. Y.
 Gillingham Co.
 90-48 201st St., Jamaica, L. I., N. Y.
 Leuchner Electric Refrigerator Co.
 150-02 88th St., Jamaica, L. I., N. Y.
JAMESTOWN
 Holmberg, H., 128 Bowen, Jamestown, N. Y.
LAURELTON, L. I.
 Howard, E.
 134-29 225th St., Laurelton, L. I., N. Y.

LONG ISLAND CITY
 All Service Co.
 2719 Jackson, Long Island City, N. Y.
 Premier Electric Refrigeration Service Co.
 4343 39th Place, Long Island City, N. Y.

NEWBURGH

Armstrong, M. A.
 10 Farrington St., Newburgh, N. Y.
 Hewitt & Warden
 68 Broadway, Newburgh, N. Y.

NEW ROCHELLE

Electric Refrigerator Sales Co.
 740 Webster Ave., New Rochelle, N. Y.

NEW YORK CITY

Automatic Refrigeration Service
 5009 Broadway, New York, N. Y.
 Daniels & Co., Inc., C. V.
 449 W. 28th St., New York, N. Y.
 Di Tucci Bros.
 151 Amsterdam Ave., New York, N. Y.
 DuBois Refrigerator Co.
 135 E. 16th St., New York, N. Y.
 Empire Electric Refrigerator Service Co.
 1118 First Ave., New York, N. Y.
 Feinstein Co., Edward
 2716 Third Ave., New York, N. Y.
 Hindley & Son, Inc., Thomas
 1185 Sixth Ave., New York, N. Y.
 Independent Electric Refrigerating Service
 Co., The
 120-22 W. 18th St., New York, N. Y.
 Independent Refrigeration Service
 148 Chambers St., New York, N. Y.
 Kanak Co., Inc.
 18 E. 41st St., New York, N. Y.
 Klein Refrigerator & Carpenter Co.
 256 Avenue A, New York, N. Y.
 Labouinsky, A. N.
 521 W. 123rd St., New York, N. Y.
 Larsen & Son, Inc., Anton
 500 E. 134th St., New York, N. Y.
 Model Household Appliance Co., Inc.
 532 Courtlandt Ave., New York, N. Y.
 Ottenheimer Brothers, Inc.
 101 W. 31st St., New York, N. Y.
 Refrigerating Electric Service and
 Installation Co.
 2716 Third Ave., New York, N. Y.
 Seufert-Phillips Refrigerator Co.
 303 W. 42nd St., New York, N. Y.
 Supreme Refrigerator Co.
 487 First Ave., New York, N. Y.
 Utility Refrigeration Co., Inc.
 (Formerly Tregonawan & Starr)
 112 E. 19th St., New York, N. Y.
 Weir, Wheelock Co., Inc.
 56 Warren St., New York, N. Y.

OCEANSIDE, L. I.

Cervis Co., 33 Moore Ave., Oceanside, N. Y.

POUGHKEEPSIE

Ghee Brothers Electric Service
 2 N. Grand Ave., Poughkeepsie, N. Y.

ROCHESTER

Browne, W. M.
 986 Portland Ave., Rochester, N. Y.
 Curtis, G. H., 684 Park Ave., Rochester, N. Y.
 Fien, G. C., 626 Magee Ave., Rochester, N. Y.
 Gilbert Appliance Corp.
 2 Circle, Rochester, N. Y.
 Heckner, Edwin
 63 Kastner Park, Rochester, N. Y.
 Hill & Waite, Inc., 14 Ely, Rochester, N. Y.
 Independent Refrigerator Service Co.
 205 W. Main St., Rochester, N. Y.
 Pappas, P. C., 522 South Ave., Rochester, N. Y.
 Rife, J. D., 183 St. Paul, Rochester, N. Y.
 Weed & Co., Rochester, N. Y.

ROCKVILLE CENTER

D. E. Electric Co.
 Sunrise Highway & Chestnut St.
 Rockville Center, N. Y.

SARANAC LAKE

Darrah, R. H.
 91 Forrest Hill, Saranac Lake, N. Y.

SPRINGFIELD GARDENS, L. I.

Queens Refrigeration & Electric Service
 137 Springfield Blvd.
 Springfield Gardens, L. I., N. Y.

SYRACUSE

Baker Electric, 542 Westcott, Syracuse, N. Y.
 Chapin Quick Radio, Inc.
 385 W. Onondago, Syracuse, N. Y.
 Economy Electric & Radio Co.
 829 N. Saline, Syracuse, N. Y.
 Electric Refrigerating Service
 123 Delmar Place, Syracuse, N. Y.
 Mullen, F. J., 127 Roberts Ave., Syracuse

TROY

McCochran, S. W., 791 River St., Troy, N. Y.
 Reardon, J. W., 412 River St., Troy, N. Y.

UTICA

Migliaccio, Anthony
 1172 Kossuth Ave., Utica, N. Y.

VERNON

Yauger, Harry, Vernon, N. Y.

WHITE PLAINS

Electric Refrigeration Service
 39 Mitchell Pl., E. White Plains, N. Y.

WOODSIDE, L. I.

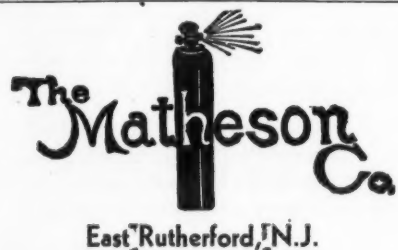
Electric Refrigeration Service Co.
 Roosevelt Ave. & 51st St., Woodside, N. Y.

YONKERS

Electric Servant Co.
 443 S. Broadway, Yonkers, N. Y.

NORTH CAROLINA

CALYPSO
 Barfield, P. H., Calypso, N. C.
 (Continued on Page 13, Column 1)



East Rutherford, N.J.

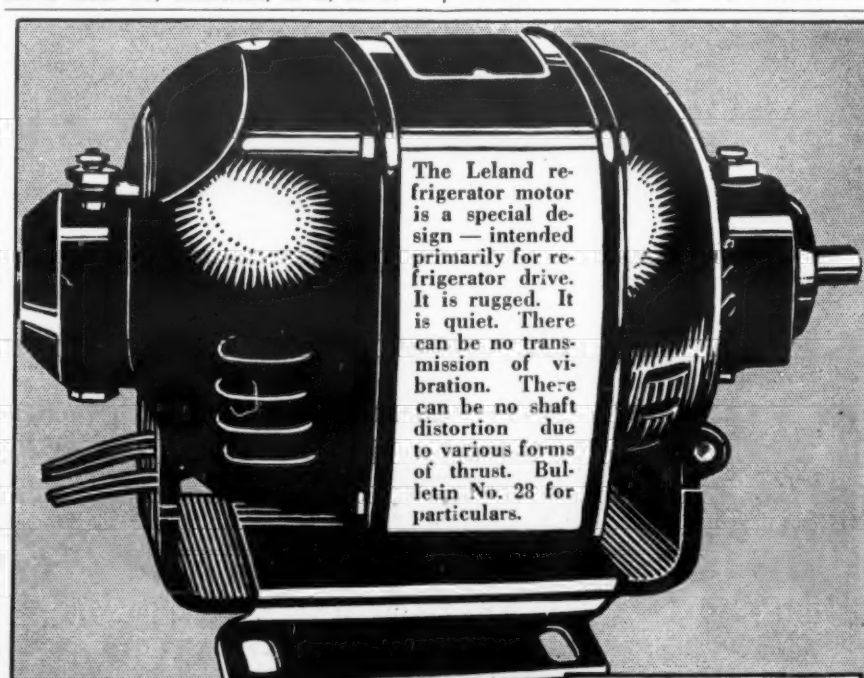
Will ship
 any quantity of
 any refrigerant
 any where in
 any cylinder at
 any time by
 any route.

The MULLINS SHEET METAL EVAPORATOR

Sanitary
Compact
EfficientWhite
Porcelain
EnamelDESIGNS FOR USE WITH HIGH SIDE AND LOW
SIDE FLOATS — IMPROVED FAST FREEZING
SHELF AT SLIGHTLY INCREASED COST.

Manufacturers: Write for Details!

MULLINS MANUFACTURING CORPORATION
 REFRIGERATION DIVISION
 SALEM, OHIO



The Leland refrigerator motor is a special design — intended primarily for refrigerator drive. It is rugged. It is quiet. There can be no transmission of vibration. There can be no shaft distortion due to various forms of thrust. Bulletin No. 23 for particulars.

Leland Motors

The Leland Electric Co.
 Dayton, Ohio - U.S.A.
 CANADIAN ADDRESS
 TORONTO
 CABLE ADDRESS
 LEELECT

DIRECTORY

OF INDEPENDENT SERVICE COMPANIES

(Continued from Page 12, Column 5)

GREENSBORO

Home Appliance Service Co., Inc.
714 W. Market St., Greensboro, N. C.
Pemberton, Tom
508 Asheboro St., Greensboro, N. C.

KANANSVILLE

Central Garage, Kanansville, N. C.

LITTLETON

Littleton Supply Co., Littleton, N. C.

RALEIGH

Kendall's Electric Refrigeration Service
402 Cutler St., Raleigh, N. C.
Thompson Electric Co.
132 Fayetteville St., Raleigh, N. C.

NORTH DAKOTA

MINOT

Electro-Motive Repair Shop
111 First Ave. S. E., Minot, N. D.

OHIO

AKRON

Idle-Seeger Co., 506 E. Exchange, Akron, O.
Ohio Store Fixture Co., Inc.
55 W. Market St., Akron, O.

BELLAIRE

Smith, R. L., 1479 Belmont St., Bellaire, O.

BUCYRUS

Metzger Electric Co.
119 East Rensselaer St., Bucyrus, O.

CAMBRIDGE

Branthover & Johnston Co., The
115-117 Court Square, Cambridge, O.

CANTON

Bentz, R. M.
811 Brown Ave. N. W., Canton, O.
Eclipse Electric Co.
209 Second Ave. N. E., Canton, O.
Scott Refrigeration Sales Co.
1218 24th St. N. W., Canton, O.
Thor Electric Shop
130 Second Ave. S. W., Canton, O.

CINCINNATI

Allied Refrigeration Service Co.
124 W. 15th St., Cincinnati, O.
Broerling Co., 907 Broadway, Cincinnati, O.
Crosson's, 3453 Edwards Rd., Cincinnati, O.
Electric Refrigeration Service Co.
2381 Ravine St., Cincinnati, O.
Merkel Brothers Co., Burbank St., Cincinnati
Schill, H., R.F.D. No. 12, Box 154, Cincinnati
Taphorn, John E., 3200 Wold St., Cincinnati
United Refrigeration Service Co.
213 E. Third St., Cincinnati, O.

CLEVELAND

A. C. W. Washing Machine Service Co.
12639 Lorain Ave., Cleveland, O.
A. R. K. Mfg. Co., 10527 Cedar Ave., Cleveland
Cleveland Electric Refrigeration Service
4511 Finn Ave., Cleveland, O.
Electric Refrigeration Service Co.
10514 Prince, Cleveland, O.
Electric Refrigerator Exchange
5609 Euclid Ave., Cleveland, O.
General Refrigerator Service Co.
551 East 115th St., Cleveland, O.
Hassmann, Chas.
12705 Revere Ave. S. E., Cleveland, O.
Kamman, H. T., 3131 East 94th St., Cleveland
Ohio Washer Co.
1223 Superior Ave., Cleveland, O.
Pollock Bros. Refrigeration Service Co.
7512 Aberdeen, Cleveland, O.
Redmond Co., H. A.
2359 E. Fourth, Cleveland, O.
Refrigeration Service Co.
7600 Carnegie Ave., Cleveland, O.
Serval Service, 3131 E. 94th St., Cleveland, O.
Stoops, E. G., 1340 E. 115th St., Cleveland, O.
Sutton Refrigeration Co.
6311 Quincy, Cleveland, O.
Vehlhaber, F. M., 3655 W. 47th St., Cleveland
Wall Refrigeration Co., The
3237 St. Clair Ave., Cleveland, O.

COLUMBIANA

Battery Service Co.
12-17 E. Park Ave., Columbiana, O.

COLUMBUS

Callahan, O. C.
71 W. Pocomont Rd., Columbus, O.
Langhorst, B. H., 962 Oxley St., Columbus, O.
Moore Electric Co., Geo. W.
772 South Eureka Ave., Columbus, O.
Rissler Co., Fred T.
2586 Cleveland, Columbus, O.

DAYTON

Anderson-Soward Co.
114 N. Main St., Dayton, O.
Electric Refrigerator Co.
14 W. Second, Dayton, O.
Frigeration Service, 210 Wayne Ave., Dayton
Independent Refrigeration Service
4041 Cleveland Ave., Dayton, O.

DENNISON

Green, John, 629 N. Second St., Dennison, O.

ELYRIA

Dickson Electric Co., The
Troxel Bldg., Washington Ave., Elyria, O.
Weeks, G. E., 801 Park Ave., Elyria, O.

FINDLAY

Porter Hardware, 414 S. Main St., Findlay, O.
Ward, Paul W., 818 West St., Findlay, O.

FREMONT

Nunamaker's Electric Store
1035 Hayes Ave., Fremont, O.

HAMILTON

Schalk, Yale H., 1171 Heater St., Hamilton, O.

LIMA

Arrow Electric Service
1012 W. Elm St., Lima, Ohio
Jacobs Appliance Sales
129 W. Market, Lima, O.

LOCKLAND

Radio & Electric Sales & Service Co.
723 Wyoming, Lockland, O.

MARIETTA

Schuff, G. M., 507 Phillips, Marietta, O.
Strayer, Carl, 719 Orchard St., Marietta, O.

NEWARK

Powell Electric Co.
18 E. Church St., Newark, O.

OCEOLA

Yngst, Wm. M., Oceola, O.

PAINESVILLE

Hulbert Electric Co., Painesville, O.

PORTSMOUTH

Mechanical Refrigeration Service Co.
1922 19th St., Portsmouth, O.
Steiner, M. L., Rosemount Rd., Portsmouth, O.

POWHATAN POINT

Wiley, Theodore, Box 67, Powhatan Point, O.

SANDUSKY

Rea-Elliott Co.
123 W. Market St., Sandusky, O.

SPRINGFIELD

Gray Electric Co.
33 W. Fountain Ave., Springfield, O.
Ohio Edison Electric Co., Springfield, O.

STUEBENVILLE

Parks, Leo C.
P. O. Box No. 1226, Steubenville, O.
Swan-Bower Co.
531 Market St., Steubenville, O.

TOLEDO

Harris, Bert, 1130 Palmwood Ave., Toledo, O.
McLaughlin's Electric Shop
2515 Collingwood Ave., Toledo, O.
Pioneer Plumbing & Heating Co.
136 W. Woodruff, Toledo, O.
Refrigeration Service Engineering
338 21st St., Toledo, O.
Tiedtke's, Toledo, O.

Young's Sewing Machine Store
3151 Cherry St., Toledo, O.

WAUSEON

Reuger, Edwin, 128 Brunell, Wauseon, O.

WEST MIDDLETOWN

Electric Refrigeration Service
(Subsidiary of Coddington Machine Co.)
Vine St., West Middletown, O.

YOUNGSTOWN

Struble-Leach Co., The
248 W. Front St., Youngstown, O.

OKLAHOMA

BARTLESVILLE

B. & J. Electric Refrigeration & Appliance
Service
406 Dewey Ave., Bartlesville, Okla.

CHICKASHEE

Southwestern Light & Power Co.
Chickashee, Okla.

MCALISTER

Rowton Refrigeration Service
McAlester, Okla.

OKLAHOMA CITY

B. & R. Refrigeration Service Co.
1010 N. E. Ninth St., Oklahoma City, Okla.
Belskey, Jerry
800 W. California Ave., Oklahoma City, Okla.
Hanks, Luther C.
1315 W. 15th St., Oklahoma City, Okla.
King Automatic Refrigerator Corp.
719 Petroleum Bldg., Oklahoma City, Okla.
Parsons, A. W.
812 W. Main St., Oklahoma City, Okla.
Refrigeration Service & Engineering Co.
811-13 N. Broadway, Oklahoma City, Okla.
Smith, Paul H.
1837 West Seventh St., Oklahoma City, Okla.
Wetherbee Electric Co.
412-14 N. Hudson, Oklahoma City, Okla.

OKMULGEE

Independent Refrigeration Service
110 No. Okmulgee St., Okmulgee, Okla.
Williams, John
c/o General Delivery, Okmulgee, Okla.

TULSA

Dance, W. C.
708 South Main Ave., Tulsa, Okla.
Electric Refrigeration Service Co.
540 S. Lewis, Tulsa, Okla.
Keefe, J. R.
2629 E. Admiral Court, Tulsa, Okla.
Refrigeration Service
102 S. Lewis, Tulsa, Okla.

OREGON

COQUILLE

Oregon Refrigeration Service, Coquille, Ore.

LA GRANGE

Carr Furniture Co., Inc., La Grange, Ore.

PORTLAND

Acme Refrigeration Service
53 Fourth St., Portland, Ore.
Electric Refrigeration Sales & Service
148 Twelfth St., Portland, Ore.
General East Side Radio Corp.
1206 Sandy, Portland, Ore.
Joe-The Service Man
32 No. Twelfth St., Portland, Ore.
Morgan & Keller Radio & Refrigerator
Service, 313 Pine St., Portland, Ore.
Refrigeration Engineering Corp.
350 E. Burnside, Portland, Ore.
Refrigeration Service Co.
779 So. Lombard, Portland, Ore.
Slims Refrigeration Service
725 E. 54th St. No., Portland, Ore.
Smith, L. F., 148 12th St., Portland, Ore.
Thompson Refrigeration Service
349 E. 37th St., Portland, Ore.

PENNSYLVANIA

ALLENTOWN

Trovinger Electric Refrigeration Service, M.
2144 Washington St., Allentown, Pa.
Wolfe Electrical Co.
110 N. Seventh St., Allentown, Pa.

ALTOONA

Bettwy Plumbing & Electric Co., L. A.
840 17th St., Altoona, Pa.
Blatchford Radio & Electric Co.
13 12th Ave., Altoona, Pa.

BERWICK

Martz, C. R., 118 E. Third St., Berwick, Pa.

BETHLEHEM

Burkhardt, F. R.
261 Ninth Ave., Bethlehem, Pa.

BUTLER

City Ice & Coal Co.
247 Jefferson St. W., Butler, Pa.

CHAMBERSBURG

Hoffman-Minich Co., Inc., Chambersburg, Pa.

EAST MCKEESPORT

Cipra, E. L.
618 Ocala St., East McKeesport, Pa.

EASTON

Bush, Lloyd, 34 South 14th St., Easton, Pa.

ERIE

Anderson-Stromenger Radio Service
1009 West Sixth St., Erie, Pa.
Apfel Engineering & Sales Co., John A.
202 E. Tenth St., Erie, Pa.
Erie Refrigeration Co., 21 W. Ninth, Erie, Pa.
Gallagher & Beck, 522 Holland, Erie, Pa.

GREENSBURG

Elsaman, Howard
639 West Newton Ave., Greensburg, Pa.

HANOVER

Hamm, E. E.
408 Baltimore St., Hanover, Pa.

JEANNETTE

Murrman Electric Co.
315 Clay Ave., Jeannette, Pa.

KENNETT SQUARE

Longwood Farms, Kennett Square, Pa.

KINGSTON

B-K Engineering, Inc.
600-4 Market St., Kingston, Pa.
Good Housekeeping Shop, Inc.
352 Wright Ave., Kingston, Pa.
Lewis, Clyde, 26 Newitt Place, Kingston, Pa.

LANCASTER

Electrical Sales Co.
26 W. Chestnut St., Lancaster, Pa.

LEHIGHTON

Keystone Electrical Repair Shop
362 S. Third St., Lehigh, Pa.

MARSHALLS CREEK

Lawton Huffman, Marshalls Creek, Pa.

MILTON

Reynolds, G. L., 504 Broadway, Milton, Pa.

NEW CASTLE

Atkinson Paint & Glass Co.
24 W. Mill St., New Castle, Pa.

NORTHAMPTON

Snyder's Electrical Service
1865 Main St., Northampton, Pa.

PALMERTON

Palmerton Office & Store Equipment Co.
225-7 Delaware Ave., Palmerton, Pa.

PATTON

Pitt Co., Inc., C. F.
451 Magee Ave., Patton, Pa.

PHILADELPHIA

Electric Refrigeration Motor Co., Inc.
1629 Brandywine St., Philadelphia, Pa.
Electric Refrigeration Repairs & Service
1215 Summer St., Philadelphia, Pa.
Electric Refrigeration Service Co.
6807 Dittman St., Philadelphia, Pa.
Engineering Co. of Philadelphia
1321 Arch St., Philadelphia, Pa.
Flanagan, J. J., 1527 Cayuga St., Philadelphia
G. & F. Refrigeration Service
1628 Sellers St., Frankford, Philadelphia, Pa.
General Refrigeration Sales & Service Co.
N. E. Corner Washington Ave. & 21st St.
Philadelphia, Pa.
Jonas, Leo C., 3504 Hamilton St., Philadelphia

Manufacturers' System
1323 Race St., Philadelphia, Pa.

Philadelphia Gas Range Co.
1026 Arch St., Philadelphia, Pa.

Refrigerator Service Engineering Co.
1305 Lombard St., Philadelphia, Pa.

Winkler Ice Machine Co.
29th St. & Sedgley Ave., Philadelphia, Pa.

PITTSBURGH

Adams Refrigerator Service
1327 Colcott, Pittsburgh, Pa.

Bortz, Harry A.
2824 Clermont Ave., Pittsburgh, Pa.

City Fountain & Electric Co.
2746 Penn. Ave., Pittsburgh, Pa.

Doven Soda Fountain Co.
2824 Penn. Ave., Pittsburgh, Pa.

Frigerator Sales & Service
5624 Penn. Ave., Pittsburgh, Pa.

Globe Electric Repair Co.
1211 N. Canal, Pittsburgh, Pa.

Bernard Gloekler Co.
1627 Penn. Ave., Pittsburgh, Pa.

Hughes, J. V., 54 South 13th, Pittsburgh, Pa.

Limberg & McCormick
1404 Wareman Ave., Pittsburgh, Pa.

Pittsburgh Refrigeration Co.
1113 Penn. Ave., Pittsburgh, Pa.

Quick Service Electric Co.
216 Stanwix St., Pittsburgh, Pa.

Refrigerator Parts & Repair Co.
1042 Brownsville Rd., Pittsburgh, Pa.

Refrigerator Service Co.
6560 Hamilton Ave., Pittsburgh, Pa.

Refrigeration Service & Maintenance
3407 Shadeland Ave. N. S., Pittsburgh, Pa.

Refrigeration Shops, Inc.
104 Blvd. of the Allies, Pittsburgh, Pa.

Ricci, S. A., 7125 Gladfield St., Pittsburgh.

Smith, B., 2544 Brownsville Rd. Pittsburgh

Superior Auto Accessories
5117 Baum Blvd., Pittsburgh, Pa.

PRIMOS

Fahnestock, W. H., Primos, Pa.

READING

Electric Refrigeration Service Co.
614 New Holland Rd., Reading, Pa.
McLaughlin, Chas. P.
120 W. Pike St., Reading, Pa.
Reading Refrigeration & Electric Co.
439 Schuylkill Ave., Reading, Pa.
Smith Electric Co.
Ninth & Washington Sts., Reading, Pa.

Wagner, W. H.

324 Chestnut St. W., Reading, Pa.

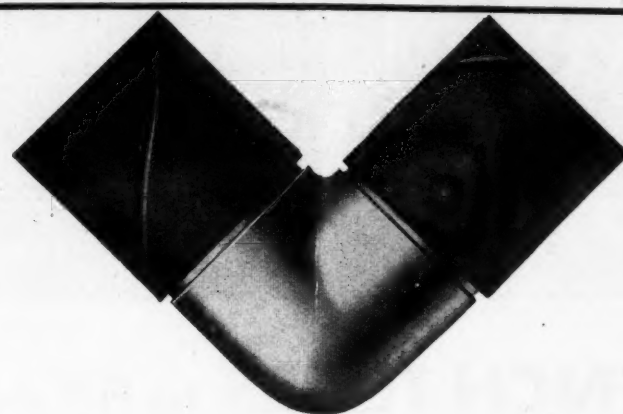
SCHENLEY

Lenzi Refrigeration & Radio Service
P. O. Box No. 127, Schenley, Pa.

SCRANTON

Automatic Equipment Co.
530 Spruce St., Scranton, Pa.
Automatic Refrigerating Exchange
310 South Washington Ave., Scranton, Pa.
(Concluded on Page 14, Column 3)

BUILT RIGHT - TO STAY TIGHT



PROTECTION ALL THE WAY

A FEATURE of Commonwealth Brass fittings is the protection given each tube seat so that every fitting reaches the user in perfect condition.

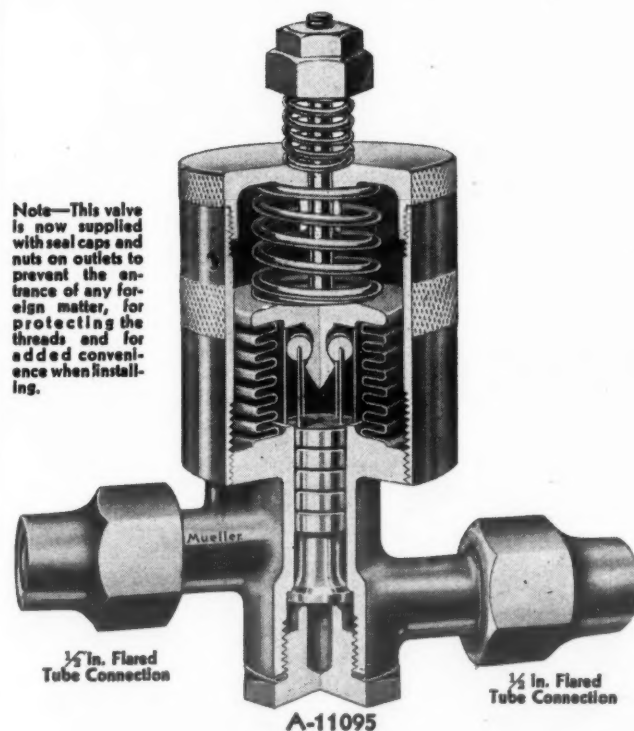
A cardboard ferrule, illustrated above, is placed around each tube seat preventing scars, nicks and abrasions in shipping.

Every Commonwealth fitting must pass 100% inspection for material, workmanship and packing. Buyers are sure of Seepage Proof Fittings when they specify and use those made by Commonwealth Brass Corporation.

SEND FOR CATALOG NO. 36

COMMONWEALTH BRASS CORPORATION
COMMONWEALTH AT G.T.R.R. DETROIT, MICHIGAN

The New Mueller Two-Temperature Control Valve Will Maintain the Range in Temperature You Require for Refrigerator and Display Case or Cooling Cabinet



Note—This valve is now supplied with seal caps and nuts on outlets to prevent the entrance of any foreign matter, for protecting the threads and for added convenience when installing.

This valve is so constructed that by merely turning the outside knurled case a service man can raise or lower the temperature without danger of losing the differential which has been previously set.

The differential is built into the valve and cannot be changed.

The temperature range may be changed without the necessity of a recheck or numerous visits of the service man.

Simplicity of construction insures a long and trouble proof service.

The snap action feature prevents seat erosion and assures uniform performance.

The body is a brass forging and is therefore seep proof and free from defects.

NOTE—When Ordering Specify "Cut-In" and "Cut-Out" Readings

Mueller Brass Co.
PORT HURON, MICHIGAN

Mueller Brass Co. Valves and Fittings are approved by the Underwriters' Laboratories of Chicago

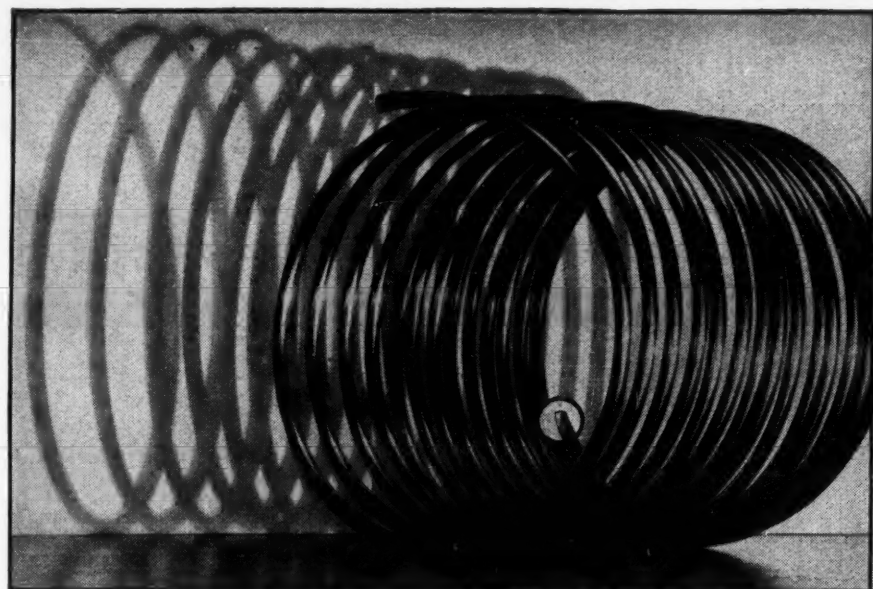
We manufacture a complete line of valves and fittings and can supply you every requirement

INVESTIGATE THE BRUNNER 1933 LINE
HIGH SIDES AND COMPRESSORS
COMMERCIAL AND DOMESTIC MODELS
NEW PRICES!

BRUNNER

REFRIGERATION DIVISION

BRUNNER MANUFACTURING CO. » UTICA, N.Y.



FRENCH TUBES to fill every standard and special need

THERE ARE French Copper Refrigeration Tubes . . . small diameter and thin wall seamless tubes . . . for every refrigeration requirement.

Stock sizes are 1/4 in., 3/8 in., 7/16 in., 1/2 in., 5/8 in., and 3/4 in., all in .035 in. gauge. Heavier gauges can be made to order. Stock coils are 25, 50 and 100 feet long. Longer lengths can be supplied at short notice.

French Deluxe Copper Refrigeration Tubes are free from oxide and foreign matter. Each coil is completely dehydrated sealed, rigidly tested and reaches you ready for use. For manufacturers who prefer to do their own dehydrating, the French Manufacturing Company produces copper tubes dried (commercially dehydrated), with either open or closed ends.

All French Copper Refrigeration Tubes possess the requisite properties for lasting, dependable service. Their grain structure is uniform. This important quality is in every coil because highest metallurgical skill, long manufacturing experience and only the best of raw material go into their production. Additional information will be furnished upon request.



THE FRENCH MANUFACTURING CO.
General Offices: Waterbury, Connecticut

FRENCH REFRIGERATION TUBES

28 SERVICE STATIONS

to give you

QUICK DELIVERY

Ample stocks are instantly available to the Service Man. No waiting. No delay. No disappointment.

PROVEN RELIABILITY

Extra Dry Esotoo is always pure, clean, safe and economical. Its uniformity and reliability is proven by years of satisfactory service.

FULL CO-OPERATION

is extended the Service Man and manufacturer. Consult your nearest distributor for EXTRA DRY ESOTOO on any servicing problem.

VIRGINIA SMELTING CO.
West Norfolk, Virginia
F. A. Eustis, Sec., 131 State St., Boston and 75 West St., New York.

EXTRA DRY ESOTOO

TRADE MARK REGD U.S. PAT OFF

DIRECTORY

OF INDEPENDENT SERVICE COMPANIES

(Concluded from Page 13, Column 5)

Carter Co., W. C.
217 N. Washington Ave., Scranton, Pa.
Electric City Store Fixture & Supply Co., Inc.
229-331 Penn Ave., Scranton, Pa.

SHARON
Gilman, R. M., 120 E. State St., Sharon, Pa.
SINKING SPRING
Reppert Electric Co.
13 Woodrow, Sinking Spring, Pa.

WAYNESBORO

Hess, F. M.
17 North Church St., Waynesboro, Pa.

WESLEYVILLE

Beck & Sons, O.
3912 South St., Wesleyville, Pa.

WEST READING

S. & S. Radio Service
428 Penn Ave., West Reading, Pa.

WILKES BARRE

Azat Ice Machine Service
195 E. Market St., Wilkes Barre, Pa.

Hick, Inc., C. Foster
64 W. Market St., Wilkes Barre, Pa.

WILLIAMSPORT

Central Pennsylvania Equipment Co.
Williamsport, Pa.

YORK

Kelly's Refrigeration Service
1549 Monroe St., York, Pa.

RHODE ISLAND

MANVILLE

Scarbel, Emile, 29 Spring St., Manville, R. I.

PROVIDENCE

American Electric Service
148 Fountain St., Providence, R. I.

Baron, Charles
25 Portland St., Providence, R. I.

Electrical Sales & Service Co.
165 Friendship St., Providence, R. I.

Liberty Refrigeration Corp.
237 Georgia Ave., Providence, R. I.

Marsden's Store Fixture House, Inc.
30-38 James St., Providence, R. I.

R. I. Radio & Electric Co.
378 Weybossett St., Providence, R. I.

Star Sheet Metal Works
362 Weybossett St., Providence, R. I.

Thornton, Gray
35 Pomfret St., Providence, R. I.

SOUTH CAROLINA

CHARLESTON

Snowden, J. C., Route 1, Charleston, S. C.

COLUMBIA

Vise & Co., B. M., 2501 Main, Columbia, S. C.

SOUTH DAKOTA

EMERY

Driscoll Sales Co., John, Emery, S. D.

IPSWICH

Lewis Asphalt Engineering Co., Ipswich, S. D.

MURDO

Central West Public Service Co., Murdo, S. D.

SIoux FALLS

Electric Refrigeration Service Co.
209 S. Main St., Sioux Falls, S. D.

Northern States Power Co., Sioux Falls, S. D.

TRIpp

Aktholz, Herbert, Tripp, S. D.

TENNESSEE

CHATTANOOGA

Johnson, R. L., 614 Poplar St., Chattanooga

MEMPHIS

Dawson, D., 228 Buena Vista St., Memphis

Evans Co., Boyd
1051 Union Ave., Memphis, Tenn.

Galloway Refrigerating Co.
972 Union St., Memphis, Tenn.

Memphis Power & Light Co.
179 Madison, Memphis, Tenn.

NASHVILLE

Nashville Machine & Supply Co.
123 Third Ave. N., Nashville, Tenn.

Refrigeration Service Co.
852 Glenn Ave., Nashville, Tenn.

Tennessee Refrigerator Co.
168 Eighth Ave. N., Nashville, Tenn.

ROCKWOOD

Molyneux Service Station, Rockwood, Tenn.

TEXAS

AMARILLO

Collier Bros., Box 2320, Amarillo, Tex.

COLORADO

Garrett, T. M., Colorado, Tex.

DALLAS

Dallas Electric Refrigerator Service &
Parts Shop
3820 Hamilton St., Dallas, Tex.

Dickson, J. D.
1614 Stoneman St., Dallas, Tex.

James Refrigeration Service Co., M. D.
3529 Dickson St., Dallas, Tex.

EL PASO

Biggerstaff, Clarence
1606 Bassett Ave., El Paso, Tex.

Huthstainer, R. E.
615 Mills Bldg., El Paso, Tex.

Miller, L. C.
3134 Aurora St., El Paso, Tex.

FORT WORTH

Anderson Co. Sales & Service, J. P.
901 W. Seventh St., Ft. Worth, Tex.

Electric Refrigeration Service
248 W. 15th St., Ft. Worth, Tex.

Lone Wolf Refrigeration Service
2700 Timberline Drive, Ft. Worth, Tex.

North Side Refrigerator Sales & Service
2243 N. Main, Ft. Worth, Tex.

HOUSTON

Cox & Blackburn
2301 Commerce, Houston, Tex.

Houston Refrigeration Service
2923 Main St., Houston, Tex.

Saxet Carbonic Co., 218 Center, Houston, Tex.

Texas Refrigeration Service
2919 McKinney Ave., Houston, Tex.

Vogler, B. H.
705 N. Shepherd Drive, Houston, Tex.

ITASCA

Harlin, F., Martin & Wesley Sts., Itasca, Tex.

LONGVIEW

Jeffries, E. S., Longview, Tex.

SAN ANGELO

Higgins, E. M., Box 615, San Angelo, Tex.

SAN ANTONIO

American Service Co.
226 Rivas St., San Antonio, Tex.

Baker, M. F.
311 Castillo Ave., San Antonio, Tex.

Gibbons Cabinet Shop
1432 N. Pine, San Antonio, Tex.

Leppard Motor Co.
3701 W. Commerce, San Antonio, Tex.
Refrigeration Service Co.
661 Main Ave., San Antonio, Tex.
Saathoff-Crawford Refrigeration Service
400 Callaghan Ave., San Antonio, Tex.

TAYLOR

Lutonsky, Anton, P. O. Box 611, Taylor, Tex.

VICTORIA

Knowlan Hardware & Machine Co.
803 East Santa Rosa St., Victoria, Tex.

UTAH

SALT LAKE CITY

Automatic Refrigeration Co.
64 Post Office Place, Salt Lake City, Utah

Edwards Co., Frank
601 S. State, Salt Lake City

VERMONT

BARTON

Plunkett-Fuller Hardware Co., Barton, Vt.

VIRGINIA

ALEXANDRIA

Moran Electrical Refrigeration Service
Mt. Ida, Alexandria, Va.

LYNCHBURG

Hudson-Morgan Electric Co., Inc.
521 Main St., Lynchburg, Va.

NEWPORT NEWS

Bramble, R. C.
4881 Washington Ave., Newport News, Va.

NORFOLK

Brooks Sheet Metal Works
1028 W. 27th St., Norfolk, Va.

Harwell, R. A., 312 Bank St., Norfolk, Va.

Virginia-Carolina Electric Works
1004 East Main St., Norfolk, Va.

RICHMOND

Virginia Ice Machine Corp.
3115 W. Cary, Richmond, Va.

Virginia Machine Works
2404 E. Main, Richmond, Va.

WASHINGTON

BELLINGHAM

Haugen, Edgar
1431 Garden St., Bellingham, Wash.

SEATTLE

Automatic Refrigeration Service Co.
2521 Fourth Ave., Seattle, Wash.

Carleton, J. J., 1524 Boren Ave., Seattle

Commercial Refrigeration Sales & Service Co.
1927 Third, Seattle, Wash.

Lynch Refrigerator Service Co., R. E.
2916 Beacon Ave., Seattle, Wash.

Refrigeration Engineering Co.
2124 Westlake Ave., Seattle, Wash.

Refrigeration Service Co.
1302 Stewart, Seattle, Wash.

SPOKANE

Automatic Refrigeration Service
120 E. Sprague Ave., Spokane, Wash.

Electric Refrigeration Service Co.
520 Second Ave., Spokane, Wash.

Electro-Kold Refrigeration Service Shop
W. 1527 Montgomery, Spokane, Wash.

YAKIMA

Yakima Hdwe. Co., Yakima, Wash.

WEST VIRGINIA

CHARLESTON

Diamond Dept. Store, Charleston, W. Va.

Gill & Shadel, Inc., Charleston, W. Va.

Electrical & Mechanical Service Co.
1021 Quarrier St., Charleston, W. Va.

HUNTINGTON

Mechanical Refrigeration Service Co.
309 32nd St., Huntington, W. Va.

MONTGOMERY

Starcher, W. C., Box 24, Montgomery, W. Va.

WHEELING

Wheeling Electric Co.
2413 Eoff St., Wheeling, W. Va.

WISCONSIN

BARABOO

Electric Refrigerator Service Co.
124 Ash St., Baraboo, Wis.

BEAVER DAM

Steinkraus, E. R.
405 Beaver St., Beaver Dam, Wis.

CHIPPewa FALLS

Blanchard Radio Sales & Service Co.
520 N. Bridge St., Chippewa Falls, Wis.

Eau CLAIRE

Advance Engineering Service Shop
Cor. Main & S. Dewey Sts., Eau Claire, Wis.

Piercy Mechanical Refrigeration Service, N.
1942 Crescent Ave., Eau Claire, Wis.

FOND DU LAC

Miller Automatic Services
17 E. Second St., Fond du Lac, Wis.

FT. ATKINSON

Hartel, Earl F.
320 W. Milwaukee Ave., Ft. Atkinson, Wis.

GREEN BAY

McKee Electric Co., H. C.
1235 Chicago St., Green Bay, Wis.

MADISON

Electrical Supply Co.
202 E. Washington Ave., Madison, Wis.

MEMONONIE

Werner, H., R. No. 9, Menomonie, Wis.

MILWAUKEE

Advanced Ice Machine Sales & Service, Inc.
2635 W. Fond du Lac Ave., Milwaukee, Wis.

Advance Refrigerating Co.
701 W. Lincoln Ave., Milwaukee, Wis.

Dougherty Co., J. J.
2622 Wisconsin Ave., Milwaukee, Wis.

Hauer Co., Henry H.
128 W. Locust, Milwaukee, Wis.

Johnson Engineering Co.
1215 A West Vliet St., Milwaukee, Wis.

Read Radio Service, Inc.
1925 W. Vliet, Milwaukee, Wis.

UNIFORM MECHANICS LIEN ACT PROPOSED TO TRADES

WASHINGTON, D. C.—Just released by the U. S. Department of Commerce is a report outlining provisions of a uniform act drawn up to provide a more equitable basis for mechanics' liens, and recommending its adoption by all divisions of the building trade.

The act provides for informal procedure which conforms largely to modern business practice in the construction industries, in order that parties involved may adjust difficulties without resort to the courts.

Mechanics' lien acts are designed to provide security for laborers, materialmen, sub-contractors, and contractors in connection with debts due them from persons who employ them or with whom they enter into contract for labor performed or materials furnished in improving real property.

Believing current practices to be unsatisfactory, the committee drafting the uniform act attempted, in sections 4 and 5, to divide the burdens among all parties concerned in construction activities in accordance with the benefits derived by them.

As explained in the report issued by the department of commerce, the provisions in these sections of the new act are as follows:

"Section 4 provides a limited period within which a materialman or sub-contractor may, by an informal notice, inform the owner that he expects to look to the owner or his property for satisfaction of his bill.

"If they fail to give the owner notice within such limited period, they may still give this informal notice and avoid the public record, but then their claims are not paid until after those of persons who do give notice within the limited period are paid.

"Laborers are not required to observe this procedure but may, if they are not paid, enforce liens against the property for their full amounts within the limit of the contract price.

"Under section 5, the owner, after receiving these informal notices, must, in making payments to the contractor, withhold money to pay those persons who have not been paid by the person who employed them.

"The owner, for his own protection, should so word his contract that at all times his payments will lag behind the progress of the work. This will help to insure that he will be in a position to pay amounts claimed in notices given him by claimants."

Thuesch, C. C., 3878 N. Fourth St., Milwaukee
Unity Refrigeration Service Co.
2745 S. 27th St., Milwaukee, Wis.

MONROE

Refrigeration Service
2503 11th St., Monroe, Wis.

RACINE

Hess, W. D., 1633 Fleet, Racine, Wis.

SHEBOYGAN

Koepsell Co., J. J.
1029 S. Eighth St., Sheboygan, Wis.

STURGEON BAY

Lau, Harry C., Sturgeon Bay, Wis.

CANADA ONTARIO

OTTAWA

D. & P. Refrigeration Service.
410 Cooper St., Ottawa, Ont., Can.

FOREIGN AUSTRALIA

SYDNEY

Independent Service Co.
36 Sir John Young Crescent
East Sydney, Australia

McGregor & May
17 Parker St., Sydney, Australia

Refrigerator & Radio Service Co.
Crowley House, York St., Sydney, Australia

CUBA

SANTIAGO

Munoz, Jose R.
Avenida, De Garzon 220, Santiago, Cuba

SOUTH AFRICA

DURBAN

Smith & Co., S. R.
52 Aliwal St., Durban, S. Africa

JOHANNESBURG

Keenan, T.
180 President St., Johannesburg, S. Africa

SOUTH AMERICA

Sao PAULO, BRAZIL

Egisto Collini
Rua Tamandare 76, Sao Paulo, Brazil

BUYER'S GUIDE



The PEERLESS THERMAL EXPANSION VALVE

(Pat. No. 1870090, Others Pending)

For use with Methyl Chloride and Sulphur Dioxide

The perfect thermostatic valve. The control always resides in the bulb due to the patented Peerless warming method. The PEERLESS will eliminate your expansion valve troubles.

List Price, \$13.50. Write for bulletin.

PEERLESS ICE MACHINE CO., 515 W. 35th St., Chicago, Ill.

A NEW FIN COIL by PEERLESS

Wedge-locked and edge-locked aluminum fins on tinned copper tubing for methyl chloride, sulphur dioxide, F-12, etc.—aluminum tubing for ammonia. Absolute Metal to Metal Contact.

A Superior Coil in which Soldered Return Bends have been eliminated.

Priced to meet 1932 conditions.

Write—Wire for Catalog.



PEERLESS ICE MACHINE CO., 515 W. 35th St., Chicago, Ill.



Completely assembled and individually bagged. Ready for shipment in your refrigerator. Write for complete list of standard sizes and prices.

REFRIGERATION SUPPLIES

We carry a complete stock of

EVERYTHING IN REFRIGERATION

including

JARROW DOOR GASKET MATERIAL

Save time, work and expense by buying everything from one source

MELCHIOR, ARMSTRONG, DESSAU CO.

116 Broad St., New York

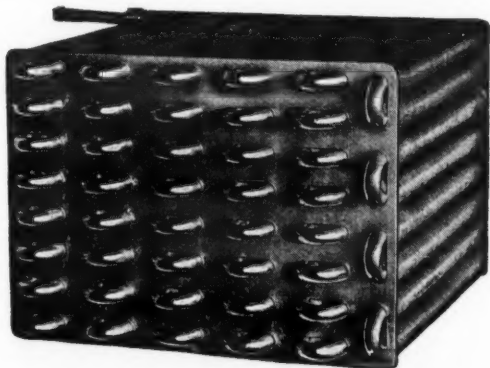
1135 Callowhill St., Philadelphia

ROME EVAPORATORS

Highest Efficiency
With Smallest Number
of Joints

Rome-Turney Radiator Co.
Rome, N.Y.

Makers of Rome Condensers and
Helical Finned Tubing



Do You Want Something Else to Sell?

Home owners are increasingly conscious of the advantages of clean, fresh air in kitchen, bath and other rooms of the house. There is a big market for MOTOVENT, the electric home ventilator. Fits any window—easy to install—beautiful in appearance.

Models to retail at 29.50 to 49.50. Attractive margins to distributors and dealers. Write for full details.

MOTOVENT

FRED'K N. ROSS, Inc.

1010 Beaubien St., Detroit

MILK COOLERS

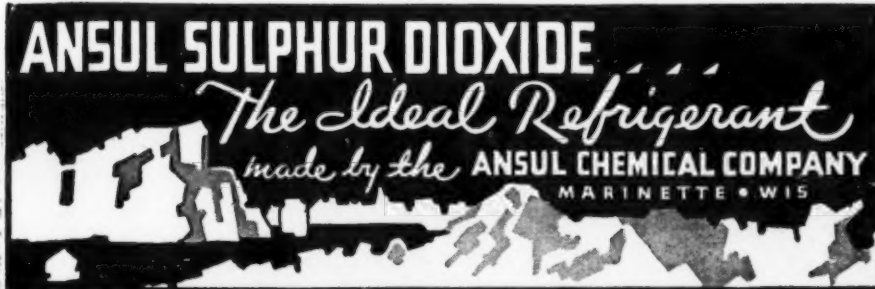
A Moderate Priced—Quick Cooling—Low Operating Cost Unit
Cooling Coils Furnished Separately

All Small Refrigeration Accessories
Tools - Fittings - Copper - Controls, etc.

ICELESS REFRIGERATION ACCESSORIES COMPANY
2401 Chestnut Street Philadelphia, Penna.

Sales Agent for
L. SAHA CO., Inc.

Local Territory Open for Responsible Organization



QUESTIONS

50-cent Coin Meters
No. 1049 (Distributor, Ohio)—"Can you advise us where we can purchase a meter to operate on 50 cents a day for use on commercial installations using motors up to 1½ hp.?"
Answer—R. & R. Appliance Co. Inc., Findlay, Ohio.

Champion Replacement Parts
No. 1050 (Distributor, Massachusetts)—"We are trying to get in touch with the company which manufactured small Champion compressor units four or five years ago. We have endeavored to reach the Champion company at New York and Chicago, but in both cases our letter was returned. Possibly the name of the company was other than the unit."

Answer—The Chicago Refrigeration Service Co., 360 E. Grand Ave., Chicago, Ill., purchased the stock of Champion parts when the Champion Refrigeration Co. of Chicago ceased manufacture of household refrigerators.

Independent Service Companies
No. 1051 (Manufacturer, Ohio)—"We are interested in obtaining a list of companies offering service on household electric refrigerators in various cities of the United States. If you have such a list, please forward it to us, as we wish to advise our dealers."
Answer—A list of more than 800 independent service companies is published in this issue of ELECTRIC REFRIGERATION NEWS.

Domestic Ice Cream Freezers
No. 1052—"Can you tell us if any progress has been made in applying an ice cream attachment to any of the standard domestic refrigerators?"
"If this has actually been done, can you tell us what manufacturers are participating, and give us some idea of how many machines so equipped are now on the market?"

"Would it be possible also to estimate the number of domestic ice cream freezers now in use in this country?"

Answer—Considerable thought and discussion on this subject by refrigerator manufacturers would indicate that an ice cream attachment may some time be incorporated in electric refrigerators, but no manufacturer has yet adopted a freezer as either standard or accessory equipment.

S. M. Howes Co., Charlestown Postal Station, Boston, Mass., is manufacturing such a freezer, and has been selling it to refrigerator dealers and distributors for over a year.

Because the development is so new, it is impossible to make an intelligent estimation of the number of freezers now in use.

Heideman Expansion Valve
No. 1053 (Service company, Iowa)—"Would it be possible for you to advise of the manufacturer of Heideman expansion valves? These are liquid control valves, self-cleaning, and are supposed to remain in adjustment."

Materials for Lapping Seals
No. 1054—"Please advise me where I can secure Bon Ami powder and crocus cloth mentioned by L. K. Wright in his article on lapping compressor seals which appeared in your Sept. 7 issue of the Engineering Section."

Answer—Bon Ami is a household cleaning powder, and can be purchased in almost any grocery store. Crocus cloth may be obtained in machinist supply stores.

Farm Refrigerators
No. 1055 (Manufacturer, Iowa)—"We are interested in securing a small iceless refrigerator (non-electric) to be used in the country. We have been advised that you have on file the names of companies making such equipment."

"In addition to our organization of salesmen for commercial brushes, we have over 350 rural salesmen selling house-to-house products, hence we would like to secure a product as above mentioned to be handled through our own organization. We do not want to manufacture it ourselves if we can secure satisfactory prices and quality from some company already manufacturing such a refrigerator."

Answer—Four manufacturers of refrigerators which can be used in non-electrified homes are listed below: Gibson Electric Refrigerator Corp., Greenville, Mich., produces the "Kero-Unit" refrigerator which operates with a kerosene burner. This refrigerator is designed especially for farm use. Perfection Stove Co., 7609 Platt Ave., Cleveland, Ohio, makes the "Perfex" refrigerator, somewhat similar to the Kero-Unit, for farm use.

Electrolux Refrigerator Sales, Inc., Evansville, Ind., manufactures an absorption refrigerator which can be adapted for use with bottled gases such as "Flamo," "Shellane," etc.

Crosley Radio Corp., Cincinnati, Ohio, makes the "Icyball" for rural refrigeration. To operate this unit, the

user must first place the ball in hot water. It is then placed in an insulated cabinet where it will provide refrigeration until it must be regenerated by again placing the ball in hot water.

KELVINATOR REPORTS BETTER 1ST QUARTER

DETROIT—Kelvinator Corp. reported for the quarter ended Dec. 31, 1932, the first quarter of its fiscal year, a net loss of \$330,193.74 after charges, depreciation, and interest.

This compares with a net loss of \$508,335.00 for the like period of the previous year.

George W. Mason, president and chairman of the board, commenting upon the report, said:

"The three months ending Dec. 31 each year have always shown a loss for our corporation due to the fact that our business is seasonal and the electric refrigeration industry has found that these months represent the low point in the seasonal swing."

"While the showing for the quarter just ended is a loss, it is the smallest loss for similar periods with one exception in the last six years."

"The quarter ended Dec. 31, 1932, had a substantial increase in units shipped, as well as a small increase in actual gross dollar sales over those of the preceding year. The reduced losses for this period give indications of the effectiveness of the economies made by the company. The improved showing, in spite of the price cuts that have been made since the previous year, is the result of rigid control and reduction of operating expenses."

Re-elect Directors

DETROIT—At the annual meeting of the stockholders of Kelvinator Corp., held here Jan. 16, the following directors were re-elected.

J. S. Bache and P. J. Ebbott, both of New York City; George W. Mason and H. G. Perkins, both of Detroit; H. T. Pierpont, Worcester, Mass.; Ernest Stauffen, Jr., New York City; and Merlin Wiley, Detroit.

The annual statement covering operations for the year ended Sept. 10, 1932, and showing a net profit of \$102,701.15 after all charges, was presented by Mr. Mason, president of the corporation, who also commented upon the steadily increasing strength of the corporation's position from both a fiscal and a sales standpoint.

The stockholders ratified and approved all acts of the corporation's officers during the past year.

Following the meeting of the stockholders, the directors re-elected all of the officers of the corporation.

WESTINGHOUSE SHARES OF RADIO TO BE DISTRIBUTED

NEW YORK CITY—Westinghouse Electric & Mfg. Co. will distribute one-half share of Radio Corp. stock on each of its outstanding Westinghouse preferred and common shares, payable Feb. 20 to stockholders of record Jan. 23, according to a recent decision of the board of directors.

Under the plan, preferred shareholders are given an optional dividend of \$3.50 in cash in lieu of the one-half share of radio stock.

The distribution was voted in compliance with the recent consent decree whereby Westinghouse and the General Electric Co. agreed to divest themselves of their stock interest in Radio Corp.

General Electric previously announced a distribution of radio stock to its shareholders on the basis of one share of Radio for every six shares of General Electric owned by its stockholders.

SMITH JOINS KOLD-HOLD

LANSING, Mich.—Lawrence Smith, former chief engineer of the Grand Rapids Store Equipment Corp., has been named sales engineer for the Kold-Hold Mfg. Co. here.

CLASSIFIED

PAYMENT in advance is required for advertising in this column.

RATES: Fifty words or less, one insertion \$2.00, additional words four cents each. Three insertions \$5.00, additional words ten cents each.

REPLIES to advertisements with box numbers should be addressed to the box number in care of Electric Refrigeration News, 550 Maccafee Bldg., Detroit, Mich.

PAYMENT in advance is required for advertising in this column.

POSITION AVAILABLE

WANTED: Sales Agents to represent Manufacturer of Nationally known line of Radios, Refrigerators, Electric Washers and Commercial Refrigeration equipment selling to Distributors and Dealers. Potential territory available. Generous commission. Reply Box 542 this paper.

WANTED: Sales Manager of proven ability to organize wholesale effort and build strong dealer set up for Distributor of a leading electric refrigerator line in Midwest territory. Real opportunity for right man. Give complete record, references, age and salary requirements. Interview will be arranged. Box 543.

POSITION WANTED

REFRIGERATION ENGINEER desires connection with a reliable concern. Well versed in design problems on all domestic and commercial refrigerating systems and installations. Highest recommendation with record of ten years. Box 540.

INDEPENDENT SERVICE MEN

MANUFACTURERS are constantly inquiring for reliable local service organizations prepared to handle installation and maintenance work in communities not served by their regular distributors and dealers. Your business card in this column will bring this profitable business direct to you. Special low rates are now offered to independent service men. For only \$10.00 you may carry a 4-line advertisement for three months. Ask for details. Address Electric Refrigeration News.

REFRIGERATION SUPPLIES AND ACCESSORIES

Tubing, Valves, Fittings, Belts, Controls, Trays, etc.

Brass & Copper Sales Company
2817 Laclede Ave. St. Louis, Mo.

NAME PLATES ALL KINDS..

Vitreous Enameled or All Metal

What better advertisement is there than a good looking name plate? Let us design one for you.

THE D. L. LAUL CO.
COLUMBUS, OHIO



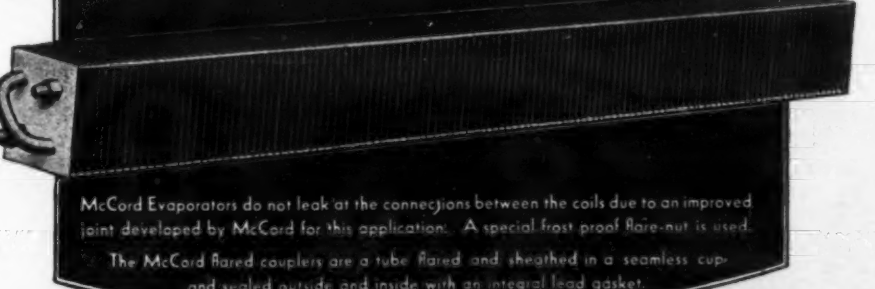
ACE
HARD
RUBBER
DOOR
FRAMES

for Refrigerated
Display Cabinets

- Molded in one piece. No joints or seams to catch dirt and grease. The use of a reinforcing, laminated, plywood core sealed by vulcanization entirely within the hard rubber prevents warping.
- Complete catalogue and prices on request

AMERICAN HARD RUBBER COMPANY
11 Mercer Street - New York, N. Y.
Akron, Ohio—111 West Washington Street, Chicago, Illinois

MCCORD COMMERCIAL EVAPORATORS



McCord Evaporators do not leak at the connections between the coils due to an improved joint developed by McCord for this application. A special frost proof flare-nut is used. The McCord flared couplers are a tube flared and sheathed in a seamless cup and sealed outside and inside with an integral lead gasket.

MCCORD RADIATOR & MFG. CO.—DETROIT MICH.